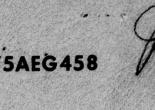


AFAPL-TR-75-52, Supplement 1





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DEVELOPMENT OF EMISSIONS MEASUREMENT TECHNIQUES FOR AFTERBURNING TURBINE ENGINES

Supplement 1 - Engine Emissions Test Data

T.F. Lyon

GENERAL ELECTRIC COMPANY Aircraft Engine Group Cincinnati, Ohio 45215

October 1975

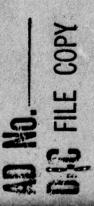
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Prepared for

AIR FORCE AERO PROPULSION LABORATORY Air Force Wright Aeronautical Laboratories Wright-Patterson Air Force Base, Ohio 45433



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Fuels and Lubrication Division

FOR THE COMMANDER

Chief, Fuels Branch

Fuels and Lubrication Division



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WABSTRACT (Continue on reverse side if necessary and identify by block number)

Comprehensive emissions test data taken throughout the exhaust plumes of J85-5 and J79-15 afterburning engines. Measurements were obtained on both engines at four power settings (military, minimum A/B, intermediate A/B, and maximum A/B) and five axial stations (0, 3, 6, 12 and 24 nozzle diameters downstream).

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SECTION 1.0

INTRODUCTION

This volume contains a comprehensive tabulation of the afterburning engine emissions test data acquired under Contract F33615-73-C-2047. The overall program involved the definition, development, and demonstration of emissions measurement techniques for afterburning turbine engines.

The program was divided into three phases. Phase I, completed in October 1973, was the system definition study. This phase involved development of the analytical model of the exhaust plume and preliminary planning of the emission measurement system to be used on the engine tests. In Phase II, the emissions measurement system was constructed and installed at the General Electric Edwards Flight Test Center at Edwards Air Force Base. Detailed emissions measurements were made throughout the plumes of two afterburning engines, a J85-5 and a J79-15. The measured emissions levels were compared with the predictions of the analytical studies of Phase I. Phase III consisted of refinement of the measurement system and plume model, and definition of the final emissions measurement procedures in a format similar to that of SAE ARP 1256. Emissions measurements on the same two engines were then made to demonstrate these procedures.

In Phase II, complete plume profiles on both engines were obtained at five different axial stations and at four engine power settings, namely, military(Mil), minimum afterburning (Min A/B), intermediate afterburning (Mid A/B), and maximum afterburning (Max A/B). A total of twenty separate test conditions were thus investigated for each engine in the Phase II measurements. In the subsequent tables in this volume, Tables 1 through 20 are Phase II measurements on the J85-5 engine, and Tables 21 through 40 are Phase II measurements on the J79-15 engine.

In Phase III, more limited measurements were made on the two engines to demonstrate the measurement procedures which had been developed. Measurements were made at the same four power levels at two axial stations. Tables 41 through 48 give Phase III measurements on the J85-5, and Tables 49 through 56 give Phase III measurements on the J79-15.

To facilitate locating data for a particular test condition, Figure 1 presents a complete listing of table numbers for each engine test condition. Also shown in Figure 1 (Column 3) is the type of probe system used for each test. For each engine, the high-temperature probes were used for the three axial stations nearest the engine, and the low-temperature probes were used for the two more remote axial stations.

Figure 2 shows the high-temperature probe geometry, and Figure 3 shows the low-temperature probe geometry. In each case, the No. 1 probe axis of rotation was on the right side of the engine (aft looking forward), so that this probe swept an arc through the upper right and lower left quadrants. Similarly, the No. 2 probe swept through the upper left and lower right quadrants. The upper quadrant is positive radial position and the lower quadrant negative in the following tables.

Each table gives the probe number, radial probe position, measured gas composition, fuel-air ratio, emission indices, total and static pressures, total temperature, and flow rates. The gas composition is the "as-measured" value which is on a "wet" basis for HC, NO and NO, and on a "semi-dry" basis for CO and CO₂, as explained in the text of the main volume of this report. Static pressure was measured only when using the low-temperature probes. The listed static pressure was the ambient pressure when using the high-temperature probes. Similarly, total temperature was measured only with the low-temperature probes and was calculated from the gas composition when using the high-temperature probes.

Data in these tables should be utilized with due regard to the accuracy of each of the measured values, especially at downstream locations where concentrations approach ambient levels due to the high dilution factor. In some cases, examination of overall integrated emissions levels, as tabulated in the main report volume, will identify certain inconsistencies indicating uncertainty in particular measured local values.

Figure 1. Listing of Table Numbers for Each Engine Test Condition.

	Probe	Axial	Table	Number fo	r Engine Po	wer Level
Engine	Туре	Station (ft)	Mil	Min A/B	Mid A/B	Max A/B
PHASE II	TEST SERIES:					
J85-5	Hi-Temp	0	1	2	3	4
J85-5	Hi-Temp	3.75	5	6	7	8
J85-5	Hi-Temp	7.5	9	10	11	12
J85-5	Lo-Temp	15	13	14	15	16
J85-5	Lo-Temp	30	17	18	19	20
J79-15	remp	0	21	22	23	24
J79-15	Temp	7.5	25	26	27	28
J79-15	Hi~Temp	15	29	30	31	32
J79-15	Lo-Temp	30	33	34	35	36
J79-15	Lo-Temp	60	37	38	39	40
PHASE III	TEST SERIES	:				
J85-5	Hi-Temp	0	41	42	43	44
J85-5	Lo-Temp	30	45	46	47	48
J79-15	Hi-Temp	0	49	50	51	52
J79-15	Lo-Temp	60	53	54	55	56

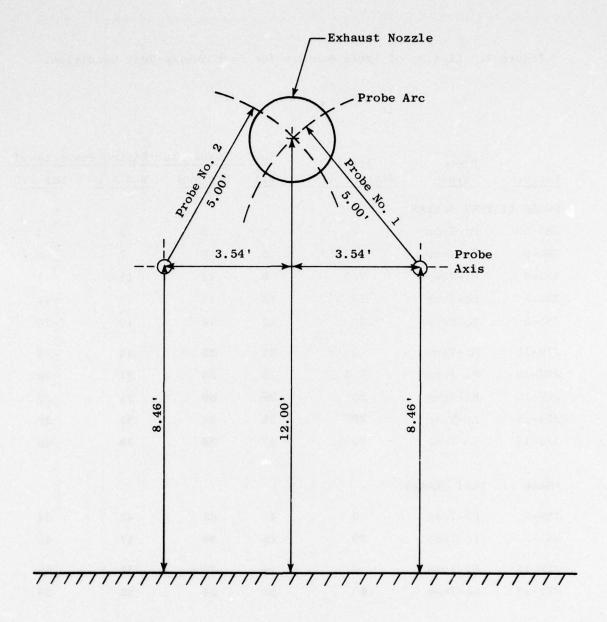


Figure 2. High Temperature Probe Geometry; Aft Looking Forward.

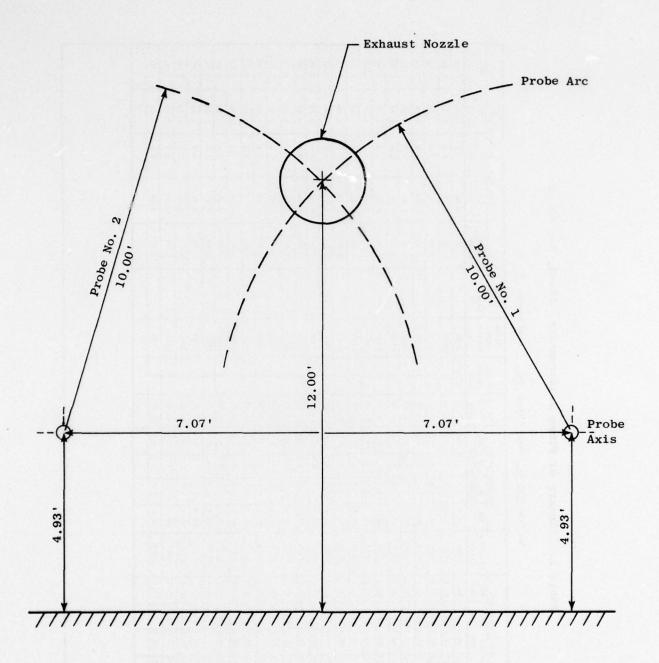


Figure 3. Low Temperature Probe Geometry; Aft Looking Forward.

Table 1. Summary of Plume Measurements, J85-5, Run No. 3.

Run Date 2/25/74, Power Setting MIL, Axial Station 0 ft

_										II.																-	
	NO _x -5	(x 10)	2.36		2.78	2.27	2.70	2.60	3.99	2.65	2.72	0.92	2.29	1.69	2.70	2.71	2.76	2.81	2 81	2.81	2.81	2.81	2.89	96.0	0.02		
-in 2	NO-5	(x 10)	1.21	1.38	1.39	1.27	1.44	1.51	1.51	1.42	1.39	0.48	1.13	0.77	1.35	1.41	1.53	1.58	1.58	1.58	1.52	1.52	1.50	0.51	0.01		
Plow Bate 1h/cec-in	HC_6	(x 10)	9.6	6.7	7.3	5.5	5.6	b. c	5.4	7.4	9.9	4.2	17.4	5.9	0.7	6.5	5.9	5.3	5.3	5.9	5.3	5.3	5.2	2.7	0.3		
Flow Re	8	(x 10)	2.36	2.36	2.34	1.89	2.14	2.02	2.12	2.33	2.34	0.73	2.02	1.68	2.50	2.42	2.30	2.22	2.24	2.28	2.25	2.41	2.33	0.72	0.05		
	Fuel 3	(X 10)	6.39	6.55	6.62	5.54	6.27	6.05	6.05	6.17	6.05	1.91	0.40	3.68	5.87	5.89	5.87	5.85	5.85	5.85	5.86	5.86	5.77	1.82	90.0		
Total	(Meas)	a,																									
Total	(Calc)	9. R	1838	1874	1881	1863	1848	1839	1792	1769	1732	1126	802	1428	1689	1697	1691	1695	1693	1695	1695	1684	1671	1171	739		
	Static	psia 13 67	-																						-		
1	Press	psia 17 78	28.48	28.64	28.89	28.84	27.76	26.84	27.61	28.58	28.64	17.58	14.39	14.54	14.29	19.28	28.28	27.45	28.39	27.86	27.45	27.86	28.58	16.82	13.70		
	No.	a c			4.2	4.1	4.3	4.3	4.4	4.3	4.5	8.8	9.6	4.6	4.6	4.6	4.7	4.8	8.8	8.8	4.8	4.8	5.0	5.3	3.5		
Inde	NO	1b Fuel	1.9	2.1	2.1	2.3	2.3	2.5	2.5	2.3	2.3	2.5	2.8	2.1	2.3	2.4	2.6	2.7	2.7	2.7	2.6	2.6	2.6	2.8	1.7		
Emission Index	НС		1.5	1.2	1.1	1.0	6.0	6.0	6.0	1.2	1.1	2.2	4.3	1.6	1.2	1.1	1.0	6.0	6.0	1.0	6.0	6.0	6.0	1.5	4.2		
Emi	00	1b/1000	-	36.0	35.4	34.1	34.1	33.4	35.0	37.7	38.7	38.4	50.1	45.7	42.6	41.1	39.1	37.9	38.2	39.0	38.4	41.2	40.4	39.6	82.9		
	Fuel/Air	0104			7610.	.0194	1610.	0610.	.0182	67 10.	.0173	.0082	.0034	.0126	.0166	.0168	.0166	.0167	.0167	.0167	.0167	.0165	.0163	. 0087	.0025		
Ι.	×	mdd 24 6	43.8	47.6	50.7	8.65	50.5	50.5	6.64	8.74	48.1	24.7	12.2	36.2	47.7	48.5	49.2	8.64	49.7	50.1	6.64	49.7	50.4	29.5	5.7		
101119	NO	mdd o	+		_	-		29.1 5	28.1 4	25.3 4	25.0 4	_	6.2 1	-	23.5 4	25.5 4	-	3	27.9 4	2	.5	5	26.5 5	5	8.2		
Gas Composition	C	- 0	9	47.7 25.3	42.2 25.7	37.7 27.5	36.3 27.8	35.1 29	35.1 2	42.1 2	38.4 2	37.0 12.8	31.0	41.5 16.4	39.7 2:	36.2 2	33.0 27.1	32.0 28	31.2 2	33.4 28	31.5 27	31.8 26.	28.6 26	26.9 15.	22.9		
Sep Pe	CO2 HC	-		-	4.07	4.01	3.96	3.93	3.77	3.69	3.57	1.69	0.70	2.59 4	3.42	3.45	3.43	3.44	3.44	3.44	3.44	3.41	3.36	1.80 2	0.52 2		
Measured	00	+-	+-		736 4	698 4	688 3	668 3	673 3	711 3	706 3	331 1	181 0	607 2	746 3	726 3	686 3	666 3	671 3	686 3	676 3	719 3	969	365 1	226 0		
10,500		6 35 A	1		2.79	1.58 6	0.65 6	-1.56 6	-2.24 6	-4.01 7	-4.72 7	-6.32 3	-7.23	5.31 6	4.58 7	3.49 7	2.41 6	1.38 6	0.64 6	-1.17 6	-2.53 6	-3.62 7	-4.71 6	-5.80 3	-6.90		140,17
	Probe		, ,	1	-	1	-	7	-	1	1	1	-	2	2	2	2	2	2	2	2	2	2	2	2		

Table 2. Summary of Plume Measurements, J85-5, Run No. 4-1.

Run Date 2/26/74 , Power Setting MIN A/B, Axial Station 0 ft

-							-														-		_	_	_	_	 	_	_
	NO _x 5	1.54	2.02	2.11	2.14	2.09	2.09	2.26	0.97	2.17	2.18	2.27	2.15	1.39	1.88	2.10	2.08	2.12	2.05	2.12	2.17	2.24	2.34	2.14	1.87				
-1n,2	NO (5 10 6)	1.9	1.7	2.6	1.7	1.6	1.5	1.6	1.0	2.2	3.8	2.4	1.6	1.9	1.8	1.8	1.8	1.8	1.7	1.6	1.7	2,7	3.6	1.8	1.6				
te, 1b/sec-in	HC (× 10-4)	68.9	3.00	2.09	2.87	5.12	5.67	4.89	1.92	2.18	1.05	2.01	90.9	9.56	4.74	1.71	2.28	3.59	4.99	6.39	3.89	1.57	1.00	2.32	10.32				
Flow Rate.	C 10-4	6.12	6.58	6.15	5.85	5.89	5.76	5.48	2.34	4.84	4.44	5.87	6.94	5.98	8.79	5.80	5.57	6.20	6.27	5.89	5.27	4.55	4.69	6.49	7.77				
	Fue1 (x 10 ⁻³)	6.40	8.42	8.80	8.56	8.05	7.74	7.78	3.34	7.24	7.51	8.09	7.95	6.31	8.96	9.13	90.6	8.85	8.54	8.14	8.34	8.97	9.01	8.92	8.14				
Total	(Meas)																												
Total	(Calc)	1759	2281	2459	2373	2166	2089	2081	2094	2234	2367	2305	2070	1741	2427	2617	2578	2456	2307	2142	2290	2580	2609	2526	2023				
Static		13.60	_																										
Total	Press	25.65	28.79	28.48	28.33	27.97	27.50	28.17	16.04	25.24	25.29	27.66	28.38	24.24	28.13	28.08	28.03	28.08	28.13	28.13	28.13	28.08	28.08	28.03	27.87				
_	NO.	2.4	2.4	2.4	2.5	2.6	2.7	2.9	2.9	3.0	2.9	2.8	2.7	2.2	2.1	2.3	2.3	2.4	2.4	2.6	2.6	2.5	2.6	2.4	2.3				
n Inde	NO I	Ľ	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.2	0.2				
Emission Index	HC b/1000	107.6	35.6	23.7	33.5	63.6	73.2	62.8	57.4	30.1	14.0	24.8	76.2	151.5	52.9	18.7	25.2	.40.6	58.4	78.5	46.6	17.5	11.1	26.0	126.8				
	8	95.7	78.1	6. 69	68.3	73.2	74.4	70.5	70.0	6.99	59.1	72.6	87.3	94.7	98.1	63.5	61.5	70.1	73.4	72.3	63.2	50.7	52.1	72.8	95.4				
	Fuel/Air Ratio	.0205	.0281	.0309	.0296	.0268	.0256	.0251	.0252	.0270	.0288	.0281	.0255	.0214	.0317	.0337	.0332	.0315	.0293	.0268	.0285	.0328	.0331	.0323	.0262				
uo	NO _X	30.2	41.4	46.0	44.6	42.9	42.6	44.4	45.3	49.2	51.9	48.1	41.6	28.9	40.0	46.2	47.1	45.5	43.6	42.5	45.1	49.4	51.7	47.1	36.8				
positi	NO	3.8	4.1	5.0	3.9	3.5	3.6	3.6	4.1	8.4	8.2	5.0	3.8	3.8	4.0	4.9	4.6	3.8	3.6	3.5	3.7	5.9	8.6	4.2	3.8				
Gas Composition	HC	4501	2014	1470	1994	3439	3795	3191	2928	1633	808	1406	3924	6593	3356	1256	1669	2567	3444	4244	2670	1148	738	1679	6725				
Measured G	°25	3.66	5.51	6.19	5.87	5.11	4.83	4.80	4.85	5.35	5.85	5.61	4.74	3.61	6.05	6.82	89.9	6.19	5.63	5.02	5.57	69.9	6.80	6.45	4.58				
	CO	2076	2331	2302	2154	2080	2022	1878	1872	1913	1806	2170	2355	2138	3308	2286	2179	2351	2285	2056	1913	1776	1842	2507	2650				
Radial	Position in.	6.17	5.10	4.03	2.96	1.58	96.0	-0.72	-1.56	-2.59	-3.65	-4.72	-5.79	6.23	5.14	4.41	3.32	2.24	1.22	-0.63	-1.49	-2.36	-3.43	-4.53	-5.26				
	Probe No.	1	1	1	1	1	1	1	-	-	1	1	-	2	2	2	2	2	2	2	2	2	2	2	2				

Table 3. Summary of Plume Measurements, J85-5, Run No. 4-2.

Run Date 2/26/74, Power Setting MID A/B, Axial Station 0 ft

_							_	_	_		_	_	_	_	_	_	_	_		_	_	_	_	_		-	
	NO _x	(x 10 -)	2.55	2.98	2.98	2.41	2.11	2.07	2.27	2.71	2.91	2.50	1.74	2.14	2.74	3.02	86.2	2.38	2.09	2.11	2.43	2.78	2.93	3.07	2.40		
-in.2	NO	(x 10)	15.7	20.5	14.9	2.7	1.7	1.7	1.8	10.1	18.7	17.0	1.5	4.6	19.3	20.8	13.4	1.9	1.8	1.8	4.9	14.4	19.9	23.3	14.4		
e, lb/sec-in	HC	1.35	0.07	90.0	0.27	1.47	2.12	2.81	2.08	0.52	60.0	0.05	1.04	98.0	0.03	0.08	0.40	2.16	4.05	3.35	1.08	0.27	60.0	0.03	90.0		
Flow Rate,	CO		2.66	2.95	3.88	5.80	69.9	8.43		5.21	2.93	2.60	6.75	5.99	2.64	3.54	5.35	90.8	8.99	8.06	5.65	4.14	3.17	2.52	3.41		
	Fuel	_	9.82	10.27	9.95	8.92	8.43	8.64	9.07	10.05	10.39	86.6	7.58	9.29	10.16	10.41	10.28	9.51	9.10	9.16	9.71	10.28	10.47	10.58	6.59		
Total	(Meas)	×																									
Total	(Calc)	2271	3064	3239	3122	2791	2686	2664	2779	3109	3232	3103	2403	2887	3197	3255	3173	2832	2627	2691	2976	3209	3297	3322	3710		
Static		13.55	-																								
Total	Press	23.34	27.04	26.89	26.73	25.91	24.98	25.45	26.01	26.99	27.30	27.20	25.19	26.42	26,94	27.09	27.15	26.99	26.89	26.78	26.89	26.99	26.94	27.15	26.73		
*	NOX	2.3	2.6	2.9	3.0	2.7	2.5	2.4	2.5	2.7	2.8	2.5	2.3	2.3	2.7	2.9	2.9	2.5	2.3	2.3	2.5	2.7	8.8	2.9	2.5		
n Inde	ON .	0.2	1.6	2.0	1.5	0.3	0.2	0.2	0.2	1.0	1.8	1.7	0.2	0.5	1.9	2.0	1.3	0.2	0.2	0.2	0.5	1.4	1.9	2.2	1.5		
Emission Index	HC	1.1 20.1 0.2	0.7	9.0	2.7	16.5	25.2	32.6	22.9	5.2	6.0	0.5	13.7	9.3	0.3	0.8	3.9	22.7	44.5	36.6	11.1	2.6	6.0	0.3	8.0		
	8	114.1	27.1	28.7	39.0	65.0	79.4	97.6	95.9	51.8	28.2	26.1	0.68	64.5	26.0	34.0	52.0	84.8	98.8	88.0	58.2	40.3	30.3	23.8	35.6		
	Fuel/Air	.0274	.0410	.0445	.0424	.0367	.0352	.0353	.0371	.0424	.0444	.0417	.0294	.0383	.0436	.0450	.0437	.0381	.0350	.0359	.0401	.0442	.0458	.0462	.0400		
· uo	NOx	39.3	65.3	17.8	76.5	59.9	54.2	51.9	55.7	70.1	73.6	64.1	41.6	53.0	8.69	9.82	75.9	58.2	49.5	49.7	60.1	72.0	77.3	0.62	61.2		
positi	ON	4.0	40.8	53.8	37.5	9.9	4.0	3.7	4.2	25.2	.4 48.2	8 43.4	4.0	12.7	50.7	52.8	35.2	5.4	3.4	3.8	13.2	38.5	53.5	0.09	36.1		
Gas Composition	HC	1109	55.5	48.7	229	1204	1767	2293	1689	438	79.4	39.8	811	602	28.0	68.5	335	1715	3114	2618	883	222	83.5	25.1	67.2		
Measured G	202	5.37	8.68	9.46	8.92	7.47	2988 7.03 1767	_	3815 7.38	8.84	9.43	98.8	5.89	7.87	9.28	9.53	9.12	7.62	3696 6.77	$\overline{}$	8.26	9.31	9.73 83.5	9.85	8.43		
	00	3325	1193	1383	1781	2557	2988	3680 6.92	3815	2368	1354	1174	2785	2650 7.87	1225	1652	2450	3460	9696	3376 7.04	2507	1924	1495	1191	1534		
Radial	Position in	-7.23	-5.79	-4.36	-3.30	-1.90	-0.95	96.0	1.92	3.31	4.38	5.81	68.9	-7.10	-5.82	-4.55		-2.57	-1.69	-0.63	1.02	1.83	3.25	4.33	5.42		
	Probe	-	1	-	7	1	-	-	-	1	-	1	-	2	2	2	2	2	2	2	2	2	2	2	2		

Table 4. Summary of Plume Measurements, J85-5, Run No. 4-3.

Run Date 2/26/74 , Power Setting MAX A/B, Axial Swation 0 ft

-																		3.5									
	NO _x E	(x 10_3)	1.15	2.98	3.57	3.42	2.84	2.26	2.13	2.15	3.09	8.54	2.83	0.53	1.91	2.14	3.16	2.91	2.66	2.16	2.30	2.80	3.16	3.56	3.36	2.35	
-in.2	NO.	(x 10_2)	09'0	1.98	2.38	2.12	1.16	0.49	0.48	0.92	1.83	2.32	1.92	0.53	0.84	1.45	2.03	1.68	1.28	0.20	0.40	1.57	2.11	2.60	2.48	1.53	
Flow Rate, 1b/sec-in	HC_5	(× 10 °)	0.14	0.11	0.12	0.47	3.79	9.05	8.80	4.62	69.0	0.12	0.11	98.0	1.07	0.08	0.11	0.56	2.02	18.3	13.37	1.57	0.23	0.12	0.12	0.10	
Flow Ra	00	(x 10 ')	2.04	8.99	15.65	18.52	12.79	11.13	11.07	12.96	17.12	18.86	10.63	4.59	4.85	9.26	15.86	20.96	18.51	12.94	11.87	13.52	14.54	18.76	20.83	9.49	
	Fuel	(x 10_2)	4.60	11.02	11.91	11.78	10.52	9.84	19.6	10.26	11.43	12.22	11.30	6.59	7.63	11.93	11.29	11.18	10.65	9.84	96.6	11.20	11.70	12.38	12.42	10.21	
Total	(Meas)	°R																									
Total	(Calc)	°R	2179	3586	3804	3721	3404	3186	3197	3366	3666	3853	3630	2505	2368	3799	3734	3657	3520	3071	3156	3596	3760	3900	3899	3399	
Static	Press	psia	13.55																						-		
Total	Press	psia	18.71	25.86	26.17	26.17	25.45	25.14	24,62	24.98	25,76	26,37	26.17	21.74	19.93	26.32	25.09	24 93	24.62	25.59	25.59	25.90	26.00	26.47	26.42	25.02	
×	NOX	1	2.5	2.7	3.0	2.9	2.7	2.3	2.2	2.1	2.7	5.9	2.5	8.0	2.5	2.8	2.8	2.6	2.5	2.2	2.3	2.5	2.7	2.9	2.7	2.3	
Inde	NO	1b Fue	1.3	1.8	2.0	1.8	1.1	0.5	0.5	6.0	1.6	1.9	1.7	8.0	1.1	1.9	1.8	1.5	1.2	0.2	0.4	1.4	1.8	2.1	2.0	1.5	
Emission Index	НС	16/1000	0.3	0.1	0.1	0.4	3.6	9.2	9.1	4.5	9.0	0.1	0.1	1.3	1.4	0.1	0.1	0.5	1,9	18.6	13.4	1.4	0.2	0.1	0.1	0.1	
En	00	1P/	44.4	81.6	131.4	157.2	121.6	113.1	114.5	126.3	149.8	154.3	94.1	7.69	63.6	121.4	140.5	187.5	173.8	131.5	118.9	120.7	124.3	14.5	167.7	92.9	
	Fuel/Air	Ratio	.0247	.0527	.0585	.0571	.0496	.0451	.0454	.0489	.0558	1090	.0539	.0308	.0282	.0582	.0571	.0563	.0530	.0434	.0448	.0537	.0574	.0611	.0615	.0488	
u	NOx	wdd	38.3	85.1	102	7.66	8.82	61.9	59.3	68.5	87.8	102	3.61	38.4	43.6	95.2	93.4	87.0	0.62	57.3	62.7	79.7	6.06	105	97.3	66.4	
position	NO	mdd	20.2	57.6	70.2	61.6	32.3	13.1	13.5	25.1	51.3	68.9	54.8	15.1	19.4	9.99	61.9	50.2	37.2	6.4	10.5	44.0	59.5	76.5	73.9	42.5	
		mdd	15.3	6.9	8.5	40.2	46	820		28	68.3	14.4	7.2	78.4	76.5	5.7	10.0	52.5		1591		149	26.7	7.7	7.4	8.9	
Measured Gas Co	200	7	5.11	0.97	11.92		0.04 3	9.07	9.12 8	9.85 4	11.20		1.16	6.31	5.79	1.92		-	0.45 1	8.54 1	8.93 1184			2.34	2.30	10.01	
Measu	00	_	1163	4675 10.97	8396 1	9786 11.45	6532 10.04 346	5502	5603 9.12 816	6684 9.85 428	1 1606	10133 12.10	5519 11.16	2286	1907	7713 11.92	8744 11.55	11473 11.07	9984 10.45 198	6143	5738	7038 10.93	7780 11.72	10133 12.34	11275 12.30	4911	
	100	ın.	-7.59	-6.51	-5.08	-3.65	-2.24	-0.95	0.73	1.92	3.67	4.74	6.17	7.25	-8.00	-6.55	-5.46	-4.19	-2.93	-1.36	-0.63	1.49	2.53	3.78	4.87	5.79	
	Probe	No.	-	-	-	-	-	-	-	7	1	1	-	-	2	2	2	2	2	2	2	2	2	2	2	2	

Table 5. Summary of Plume Measurements, J85-5, Run No. 5.

Run Date 2/27/74 , Power Setting MIL , Axial Station 3.75 ft

-				_		_					_							_		_								-	
	NO _x _5	. 552	1.07	1.79	2,30	2.63	2.72	2.72	2.65	2.22	1.52	.752	.405	308	124														
in.2	NO 5	.322	.593	.955	1.25	1.43	1.54	1.60	1.50	1.23	.842	.432	.235	171	920														
e, 1b/sec-in	HC 6 (× 10 °)	3.11	4.33	5.57	6.49	6.29	6.50	6.50	6.35	6.62	5.51	3.84	2.67	2.31	1.43														
Flow Rate,	CX 10-4	.458	.830	1.36	1.94	2.17	2.13	2.10	2.08	1.75	1.12	09.	.334	.245	101														
	Fuel (x 10 ⁻³)	1.15	2.28	3.98	4.99	5.72	5.91	5.91	5.77	4.73	3.24	1.60	0.81	0.55	0.19														
Total	(Meas)																												
Total	(Calc)	57.6	1207	1436	1568	1679	1722	1719	1690	1524	1337	1086	908	842	902														,
Chatio	Press	13.57													-														
Total	Press	15.78	18.38	23.36	26.37	28.24	28.44	28.50	28.34	25.80	21.18	16.77	15.11	14.64	13.97														
	NOX	4.8	4.7	4.5	4.6	4.6	4.6	4.6	4.6	4.7	4.7	4.7	5.0	5.6	6.5												1		
Index		2.8	2.6	2.4	2.5	2.5	2.6	2.7	2.6	2.6	2.6	2.7	2.9	3.1	4.0			-	-	1				-	-	-	1		
Emission Index	HC NO 1b Fue	2.7	1.9	1.4	1.3	1.1	1.1	1.1	1.1	1.4	1.7	2.4	3.3	4.2	7.5			-	-	+		-			-	-	1		
Bmis	100	39.8	36.4	34.2	38.9	38.0	36.1	35.5	36.0	37.1	34.5	37.5	41.2	44.6	53.4	-		tion NO.	-	+				-	-	-	1		
-			-	-	-	-			-			\vdash	H	-	-	-	-	sition	-	-	-	_	-	-	-	-	1		
	Fuel/Air Ratio	4 .0061	.0092	0126	910.	.0163	0710.	6910.	0165	6210.	1110.	3 .0075	.0049	.0039	.0020			be #1 Posi											
5	NOX	18.	27.2	35.3	41.5	46.4	48.5	48.9	47.5	40.8	32.4	22.3	15.9	14.1	8.7			Probe											
Omposition	NO	10.8	15.3	19.3	22.7	25.7	27.9	28.0	27.0	22.4	17.8	12.6	9.2	7.8	5.4			Listed											
S Com	HC	33.6	35.3	37.2	37.9	38.1	36.6	37.0	38.5	39.4	38.6	36.5	34.5	34.4	32.7														
Ped G	200	1.25	1.89	2.59	3.01	3.37	3.51	3.50	3.40	2.86	2.29	1.54	1.02	0.81	0.42			e #2								Γ	1		
Measu	CO CO ₂ HC	255	353	452	869	653	646	634	627	543	402	295	217	185	111			Only Probe #2 Data									1		
Radial		-8.37	-6.91	-5.46	-4.37	-3.28	-1.53		1.32	2.71	3.78	5.59	6.32	7.05	8.51			NOTE: On									1		
	Probe No.	2	2	2	2	2	2	2	71	61	2	2	2	2	27														

Table 6. Summary of Plume Measurements, J85-5, Run No. 6-1.

Run Date 2/28/74 , Power Setting MIN A/B , Axial Station 3.75 ft

	-5																												Г
	NO _x	.225	.393	.570	1.08	1.80	2.19	2.20	2.14	2.04	1.64	1.10	.655	.378	.074	0	0	0	0	.126	.316	.661	1.13	1.74	2.11	2.16	2.20	2.14	
.1n.2	NO 5	.038	.052	.063	080	133	.235	.157	.158	157	.126	.082	070	.038	.013	0	0	0	0	.026	.061	.094	.125	.129	.234	.154	.152	.153	
, 1b/sec-in	HC 5	62.3	88.2	127	192	207	215	306	341	328	270	213	150	94.9	21.2	0	0	0	0	45.1	99.5	199	240	221	217	273	375	366	
Flow Rate,	10-4	.818	1.45	2.19	3.65	5.00	5.23	5.41	5.71	5.79	5.22	3.91	2.60	1.51	.235	0	0	0	0	.400	1.23	2.62	4.15	5.25	5.72	5.67	5.61	5.97	
	Fue13 (x	0.75	1.31	2.11	3.99	6.67	7.82	7.86	7.93	7.84	6.31	4.08	2.34	1.26	0.21	0	0	0	0	0.37	1.02	2.36	4.17	6.43	7.80	7.72	7.58	7.66	
ia1																													
Total	(Meas)																												
Total	(Calc)	916	1046	1246	1580	1991	2180	2167	2160	2143	1910	1585	1262	1036	787	663	919	512	511	908	996	1257	1580	1946	2184	2138	2064	2075	
Static	Press	13.61																									•	-	
Total	Press	14.48	15.41	16.60	20.04	25.85	28.12	28.06	26.22	28.17	25.08	20.25	17.11	15.26	13.77	13.61	13.61	13.61	13.61	14.02	14.90	17.08	20.51	25.33	27.92	27.98	27.98	28.18	
×	NOX	3.0	3.0	2.7	2.7	2.7	2.8	2.8	2.7	2.6	2.6	2.7	8.2	3.0	3.5	4.1	4.5	11.5	10.4	3.4	3.1	2.8	2.7	2.7	2.7	2.8	2.9	2.8	
Inde	NO 1b Fue	0.5	0.4	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	9.0	8.0	1.4	4.4	3.3	0.7	9.0	0.4	0.3	0.2	0.3	0.2	0.2	0.2	
Emission Index	HC b/1000 1	83.0	67.3	60.4	48.0	31.0	27.5	38.9	43.1	41.9	42.8	52.3	64.3	75.3	101	98.4	135	862	104	122	97.6	84.2	57.6	34.3	27.8	35.4	49.5	47.8	
E	CO 18/	109	1111	104	91.4	75.0	6.99	8.89	72.1	73.9	82.7	95.9	111	120	112 1	130	136	273 2	103	108	121	111	9.66	81.6	73.3	73.5	0.47	6.77	
	Fuel/Air Ratio	1 1900	0089	0110	0162	0228	0920	0261	0262	0258	0217	0164	0113	0079	0037 1	.0021	0016	0001 2	0000	0042	0000	0115 1	.0164	0221	0261	0255	.0246	.0248	
		.5	-		6	3	. 8	45.0		6.		.3		ÉV	4	. 7	4.8	2.0	1.2	0	-	-	6.	0.			17	6.	
nposition	MO _X	.0 11	1.9 15.1	2.1 18.9	2.5 26	2 38	4.0 44	3.5 45	3.3 43.7	3.2 41	7 35	27	.8 20.1	1.7 15	3 8	.0 5	1.5 4	.8	-	6 6	5 13.8	2.5 20.1	8 27	.2 37	.2 44.0	7 44.5	2 44	.2 42	
Compos	NO m	0 2	-	-	-	6	-	-	_	-	7.2 2.7	44 2.1	-	-	798 1.	450 1.	469 1.	0	0.4	1	8 2.5	-	7	3	4	7 3.7	3	3	
Ses C	HC bbm		47 1112	1361	9 1584		1439	13 2045	10 2268	5.03 2175	1879	10 1744	99 1496	1236				0.03 170.3	13 40	0.73 1077	1.25 1428	2.07 1983	3.08 1926	4.32 1532	5.18 1459	5.01 1817	4.75 2454	9 2387	
Measured Gas Col	82	01.10	2 1.47	3 2.04	9 3.09		7 5.17	7 5.13	9 5.10	-	7 4.20	4 3.10	2 2.09	9 1.44	7 0.67	8 0.38	7 0.28		0 0.03				3.0					5 4.79	
	D mdd	700	932	1193	1559	1809	1847	1907	1999	2022	1897	1654	1322	666	447	298	237	78	20	478	006	1342	1722	1910	2032	1990	1929	2045	
Radial	Position in.	-9.74	-8.66	-7.59	-6.15	-4.36	-2.94	-1.24	0.53	2.26	3.67	5.45	68.9	7.96	10.12	11.55	10.53	11.78	13.24	9.07	7.24	6.15	4.33	3.06	1.66	89.	-1.36	-2.93	
	Probe No.	-	1	1	1				1								2				1								

Table 7. Summary of Plume Measurements, J85-5, Run No. 6-2.

Run Date 2/28/74, Power Setting MID A/B, Axial Station 3.75 ft

		_	_	_	_	_							-										_			-				
	NO _x -5	0.390	0.636	0.994	1.34	2.40	2.61	2.59	2.62	2.46	1.75	66.0	0 .499	0.221	0.043	610.0	0.202	0.546	1.33	2.22	2.72	2.48	2.52	2.71	2.42	1.43	0.656	0.271	0.078	
in. 2	NO 5 (x 10 5)	0.078	0.212	0.414	0.818	1.63	1.77	1.55	1.78	1.74	1.07	0.495	0.204	0.049	0.00	0.003	0.034	0.099	0.545	1.39	1.85	1.35	1.47	1.92	1.72	0.781	0.149	0.047	0.014	
e, lb/sec-in	HC_6) (× 10_6)	8.27	9.01	5.80	3.50	3.84	6.25	8.28	5.24	3.08	3.04	4.05	4.77	3.94	0.871	0.616	6.47	10.4	7.27	3.70	5.44	13.5	11.6	3.39	2.02	5.21	9.83	8.85	3.32	
Flow Rate,	00 × 10 4	1.07	1.49	1.87	1.81	2.28	2.94	3.24	2.94	2.39	1.98	1.67	1.11	0.455	0.084	0.054	0.705	1.68	2.54	2.48	2.90	3.79	3.38	2.10	1.90	2.24	1.69	.873	.208	
	Fue1 (x 10 ⁻³)	1.56	2.65	4.14	5.84	9.59	10.42	10.35	10.48	10.25	7.61	4.50	2.27	0.82	0.13	80.0	0.84	2.48	90.9	9.24	10.88	10.35	10.51	11.31	10.09	6.51	2.98	1.18	0.27	
Total					43/																									
-	3		_		3																	4								
Total	(Calc)	1334	1672	2054	2576)	3128	3309	3292	3346	3295	2772	2141	1582	1078	837	648	1143	1663	2475	3087	3436	3294	3341	3550	3283	2600	1821	1291	892	
-	· s	09																												
Statio	Press	13.	7																										1	
Total	Press	15.21	16.39	18.19	19.64	\$5.75	36.62	26.52	26.52	26.32	22.87	18.66	15.93	14.38	13.66	13.71	14.28	16.04	20.61	25.07	26.94	26.47	26.58	27.30	26.00	21.08	16.56	14.59	13.76	
	NOX	2.5	2.4	2.4	2.3	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.2	2.7	3.3	2.8	2.4	2.2	2.2	2.4	2.5	2.4	2.4	2.4	2.4	2.2	2.2	2.3	2.9	
Emission Index	NO N	0.5	8.0	1.0	1.4	1.7	1.7	1.5	1.7	1.7	1.4	1.1	6.0	9.0	7.0	1.2	4.0	0.4	6.0	1.5	1.7	1.3	1.4	1.7	1.7	1.2	6.0	0.4	0.5	
ion	100	6.	3.4	1.4	9.0	4.0	9.0	8.0	0.5	0.3	0.4	6.0	2.1	4.8	6.7	.5	7.	.2	.2	0.4	0.5	.3	1.1	0.3	2	8.0	3.3	7.5	12.3	
Emiss	HC 1b/1000	2														6	7	4	1			_			0				_	
	8 -	8.89	56.4	45.1	31.0	23.8	28.2	31.3	28.1	23.3	26.0	37.0	49.0	55.5	64.5	67.1	83.9	67.8	42.0	26.8	26.7	36.6	32.2	18.6	18.9	34.4	56.7	74.0	17.1	
	Fuel/Air Ratio	.0114	.0165	.0227	.0319	.0424	.0462	.0459	.0470	.0458	.0355	.0242	.0151	9200.	.0040	.0016	9800.	.0165	.0302	.0417	.0488	.0461	.0410	.0511	.0455	.0323	0610	.0108	.0050	
	NO _x	17.9	24.9	34.0	45.6	63.5	70.5	68.4	9.69	67.2	49.3	33.3	20.7	12.9	8.4	3.0	12.9	22.9	40.0	59.1	73.1	66.1	67.0	73.8	64.3	43.0	25.5	15.6	9.2	
Composition	NO Mqq	3.9	7.8 2	13.4 3	26.4 4	43.9 6	47.2 7	41.9 6	46.6 6	47.0 6	29.7	16.0 3	8.0 2	3.0 1	1.8	1.3	2.2	3.9 2	17.1	38.6 5	49.0 7	35.8 6	40.5 6	53.1 7	45.7 6	22.7 4	6.2 2	2.4	1.8	
	L	125	114	64.7 1	36.2 2	30.7	58.1	75.5 4	50.4	27.9	80	0.	65.4	6.67	26.7	33.2	137	140	72.6	1	51.4	121 3	102 4	29.8	59.04	49.02	126	166	129	
ed Gas	CO2 H	2.30	3.37	4.69	69.9	9.05		9.75	\vdash	9.78	7.49	5.01	3.09			0.34	1.72	3.33		8.84		9.75	9.98	11.00	9.74	6.77	3.87	2.17	1.01	
Measured Gas	oo udd	824 2	983 3	1087 4	1056 6	1089	1410 9	1553 9	1431 10.01	1156 9	988 7	948 5	778 3			118 0	763 1	1176 3	1348 6	1204 8	1416 10.43	1821 9	1635 9	1034 11	932 9	1187 6	1134 3	840 2	410 1	
Radial	-	-10.46	- 9.19	- 7.75	- 6.32	- 4.53		- 0.82	1.11	2.79		6.35	8,14	-	11.72	13.87	-11.65	- 9.46	- 7.64	- 5.82	- 4.01	- 2.22	- 0.69	1.67	3.42	5.32	7.05	8.87	11.06	
	Probe P	1	7	1	-	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	

Table 8. Summary of Plume Measurements, J85-5, Run No. 6-3.

Run Date 2/28/75, Power Setting MAX A/B, Axial Station 3.75 ft

					_	_	_			_	_	-	_	_	_	_		-	-	-	_	_	-	-	-	-
	NO _x 5	0.043	0.280	0.738	1.63	2.81	2.94	2.82	3.02	2.96	1.76	0.830	0.427	0	0.255	0.713	1.98	3.07	3.04	2.66	2.84	2.96	1.55	0.652	0.198	0.048
-in.2	NO (> 10 - 5)	0.027	0.157	0.385	0.949	1.75	1.96	1.88	2.06	1.77	1.12	0.435	0.233	0	0.137	0.386	1.27	2.09	2.15	1.85	1.85	1.85	0.962	0.326	0.112	0.030
te, 1b/sec-in	HC (× 10 - 6)	0.374	0.784	0.963	1.36	1.75	1.23	1.17	1.21	1.18	1.60	1.19	0.970	0	0.784	1.19	1.59	1.23	1.27	1.16	1.24	1.23	1.48	0.978	0.688	0.340
Flow Rate,	C 10-4	960.0	0.550	1.45	3.21	11.3	10.9	7.26	8.51	9.94	3.71	1.54	0.762	0	0.448	1.43	3.96	12.4	11.5	06.9	12.28	13.68	3.57	1.45	0.378	0.106
*	Fuel ₃ (× 10)	0.17	1.12	3.21	6.78	11.69	12.26	11.73	12.09	11.83	8.02	3.95	1.94	0	0.98	2.97	7.93	12.29	12.65	11.56	12.35	12.32	7.40	3.26	98.0	0.20
Total	(Meas)																									
Total	_	908	1328	2045	2895	3874	4060	3940	3984	3896	3147	2238	1597	858	1296	1999	3174	4021	4127	3883	4037	4000	3063	5069	1253	865
Statio	Press	13.60	_																							•
Total	Press	13.71	14.43	16.34	20.14	25.39	25.65	25.39	25.85	25.70	21.58	17.11	15.26	13.60	14.28	16.04	21.32	25.85	26.11	25.33	25,90	25.95	20,66	16.35	14.18	13.71
×	NO.	2.5	2.5	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.2	2.1	2.2	3.2	2.6	2.4	2.5	2.5	2.4	2.3	2.3	2.4	2.1	2.0	2.3	2.4
n Inde	NO 1b Fue	1.6	1.4	1.2	1.4	1.5	1.6	1.6	1.7	1.5	1.4	1.1	1.2	1.4	1.4	1.3	1.6	1.7	1.7	1.6	1.5	1.5	1.3	1.0	1.3	1.5
Emission Index	HC NO 1b Fuel	2.2	0.7	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	2.0	0.8	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.8	1.7
ā	S P	9.99	49.1	45.1	47.3	9.96	88.7	6.19	70.4	84.0	46.3	39.0	39.3	56.8	45.7	48.1	49.9	101	9.06	59.7	99.4	111	48.3	44.5	44.0	52.9
	Fuel/Air Ratio	.0035	.0112	.0226	.0381	7650.	.0638	.0605	.0617	6650.	.0431	.0259	.0152	.0043	7010.	.0218	.0437	.0631	.0654	.0592	.0635	.0629	.0415	.0230	1010.	.0044
	NO _X	5.5	17.3	32.1	54.4	85.7	0.68	84.1	89.2	87.4	58.1	33.5	20.5	8.8	17.6	31.8	65.4	94.0	94.0	115	86.8	87.0	52.8	28.8	14.8	6.9
mposition	NO	3.7	9.5	17.2	32.9	8.99	58.3	57.4	60.5	61.0	36.0	17.6	11.4	3.8	9.4	16.9	8.04	62.7	64.2	55.2 815	56.3	53.9	32.0	14.4	8.2	4.3
Gas Comp		15.9	16.5	1	2	100			7			5	5		17.71	1		1							16.3	16.1
		0.72 15.9	2.29 16.5	4.66 14.	7.97	12.41 13.8	13.38 13.9	12.83 13.9	13.04 13.	12.55 13.5	9.07 13.1	5.35 13.	3.14 14.	0.89 18.5	2.20 17.7	4.49 15.	9.18 13.8	13.15 13.6	13.73	12.55 14.3	13.23 14.0	13.01 13.6	8.69 13.3	4.75 14.5	2.07 16.3	0.91 16.0
Measured	O mad	210	579	1076	1932	6307	6222	4126		5511	2152	1070	631	261	514	1109	2354	6967	6527 13.73 14.0	3869	6933	7644	2155	1081	466	249
Radial	-	12.98	10.65	8.32		4.20	2.26	-0.65		-4.36	-6.51	-8.83	-10.98	11.78	96.6	7.41	5.59	3.42	1.02	-1.53	-3.28	-5.09	-7.64	-9.83	-12.01	-14.19
	Probe No.	1	1		1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2

Table 9. Summary of Plume Measurements, J85-5, Run No. 7-1.

Run Date 3/1/74 , Power Setting MIL , Axial Station 7.5 ft

_	,	_	_	_	_	_	_	_	-	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_			_
	NO _X 5	(x 10_)	0.24	0.51	0.85	1 41	1 87	1 74		0.64	0.35	0.13	20.0	0.00	20.02	0.11	0.25	0.35	1.10	1.73	1.93	1.40	0.67	0.28	0.10	0.03		
-in.2	NO	(01 x)	0.12	0.25	0.43	69.0	0.90	98.0	20.0	0.30	0.16	0.07	000	20.00	10.0	0.00	61.13	0.21	0.55	0.82	0.92	99.0	0.31	0.14	0.05	0.01		
Rate, 1b/sec-in	HC_6	(x 10)	1.27	1.98	2.91	3.94	4.69	4 86	20.5	2.72	1.85	1.00	0 0	0.00	200	20.0	20.0	2.00	3.36	4.31	4.83		2.52	1.37	0.75	0.28		
Flow Ra	8	(x 10)	0.21	0.49	0.77	1.21	1.52	1 47		0 60	0.34	0.14	0.46	31.0	010	0 00	2	0.45	0,95	1.41	1.55	1.18	0.62	0.26	0.10	0.02		
	Fue1	(x 10 -)	0.47	1.10	1.94	3.28	4.26	4.05	2 60	1.43	0.74	0.25	90 0	0 03	81.0	0.48	1 1	61.1	2.40	3.92	4.39	2.98	1.48	0.57	0.17	0.03		
Total	(Meas)	°R																										
Total	(Calc)	E S	800	926	1082	1282	1406	1378	1311	966	898	723	585	552	672	802	934		1146	1010	1427	1223	1005	834	674	570		
Static			13.61	-						-								F	+	-	1	1	1	1	-	-		
Total	Press	psia	14.57	15.90	18.07	21.88	25.02	24.35		16,63	15,08	14.10	13 74	13.66	14.02	14.59	16 04			00000	23.33	21.23	10.11	14.69	13.97	13.66		
lex	NO	-1	2.0	3 4.6	4.4	4.3	4.4	4.3	_	1	4.7	5.3	7.7	1	0.9	5.2	1	1	1	1	1	4.4	1	4.9	5.8	4.4		
Emission Index	4	=+	2.6	8 2.3	.5 2.2	2 2.1	1 2.1	.2 2.1	+	+	5 2.2	3 2.6	4 4 0	-	3.3	3 2.7	-	1	+	+	-	2.2	+	2.4	3.0	4.7		
Emiss	O HC	2	4 2.7	9 1.8	9	8	.6 1.1	2	L	1	3 2	0.4.0	2	7 12	9.4.4	6 2.6	5 1.8	1	+	-	+	2 .	+	2.4	6 4.4	4 9.2	-	
لــ	11.	1	44.4	6 40.9	39	36	35	0 36	+	+	5 45.	4 54.0	76		55	4 47.6	42	39	35	36	+	33.1	+	+	9.99	7 78.4	+	
	Puel/Air		.0034	.0056	.0077	9010	.0124	.0120			.0045	.0024	6000	.0005	.0019	.0034	.0057	0086	61.00	9010	900	7900		.0040	.0019	.0007		
ion	NOX	-		16.2	21.6	28.7	33:7	32.5	-	-	13.6	8.3	5.1		7.5	11.7	17.4	25.1	32.4	-	-	10.1		12.3	7.4	4.7		
mposition	NO M	_	2.6	4 8.2	2 10.5	3 14.1	6 16.3	1 15.4	0 11.8	4 8.6	6 6.3	5 4.1	2.7	0 2.3	4.2	0.9	8.4	4 12.3	2 15.8	17.0	10 01	0	1	0,0	3.8	2.6		
Gas Co	E E			21	23.	25.	27.	29	29	26.	23.	20.	18.4	17.	0.81	19.3	8 21.3	24.	27.	27	1			_	18.2	16.7		
5	8,4	1	0.71	1.15	2 1.59	0 2.18	6 2.56	8 2.48			8 0.94	0.50	1 0.21		0.40	0.72	1.18	1.78	+-	2.63	2 00	1.38	0 00	0.0	0.41	0.17		
	8 8	1	163	241	322	410	466	458	385	293	218	141	84.4	61.1	116	176	257	359	450	474	407	294	100	130	119	71.6		
	Position in.		-11.93	-9.02	-6.51	-4.01	-1.56	1.26	3.67	6.17	8.68	11.19	13.70	-16.52	-13.94	-11.65	-8.92	-6.00	-3.28	69.0-	2 89	5.59	2 8	10.0	11.42	13.97		
	No.	1	-	1	+	4	-	-	1	-	7	-	4	64	2	2	2	2	2	2	2	2	0		2	2	T	

Table 10. Summary of Plume Measurements, J85-5, Run No. 7-2.

t
7.5
Station
Axial
A/B,
MIN
Setting
Power
3/1/74
Date
Run

	-		_													-					-	OR CO	-		_	1	
	NO _x 5	0.043	0.154	0.333	0.665	1.18	1.46	1.15	0.667	0.291	0.101	0.034	0	0.037	0.148	0.406	0.811	1.37	1.54	1.17	D. 588	0.216	0.084	0.004			
-1n.2	NO 5	0 .007	0.017	0.026	0.055	0.049	0.064	0.050	0.028	0.022	0.011	0.004	0	0.007		0.031	0.068	0.114	0.064	0.010	0.047	0.032	0.016	0.001			
te, 1b/sec-1n	HC_6(×)	99.6	35.6	72.2	123	180	228	201	129	67.3	22.68	7.67	0	9.44	37.8	92.0	158	234	230	202	124	52.7	20.98	0.87			
Flow Rate,	C 10-4	0.15	0.489	1.23	2.41	3 87	4.82	4.03	2.49	1.0	0.330	0.109	0	0.128	0 .491	1.58	3.00	4.51	4.89	4.10	2.17	0.816	0.262	0.012			
	Fue1 (× 10-3)	0.14	0.57	1.28	2.77	4.91	6.36	4.99	2.78	1.12	0.36	0.10	0	0.11	0.53	1.56	3.38	5.70	6.42	5.07	2.35	08.0	0.27	0.01			
Total	(Meas)																										
Total	(Calc)	722	688	1079	1420	1765	1952	1776	1436	1049	849	695	536	683	872	1158	1523	1860	1966	1786	1345	985	801	624			
Statio		13.60																					1	•			
Total	Press	13.74	14.26	15.29	17.60	21.83	25.18	21.93	17.50	14.98	13.95	13.69	13.60	13.71	14.23	15.63	18.69	23.57	25.23	22.11	16.82	14.43	13.86	13.60			
ex	NO _x	5 3.1	3 2.7	2 2.6	2 2.4	1 2.4	1 2.3	1 2.3		2 2.6	3 2.8	3.4	8.3	3.4	3 2.8	2.6	2.4	2.4	2.4	2.3	2.5	2.7	3.1	3.8			
Emission Index	NO 15	0 0.5	5 0.3	4 0.2	4 0.2	6 0.1	8 0.1	2 0.1	6 0.1	1 0.2	0 0.3	7 0.4	1.8	8 0.6	.3 0.3	0.2	6 0.2	1 0.2	0.1	9 0.2	7 0.2	9 0.4	7 0.6	8 1.2			
Emissi		0.69	8 62.5	8 56.4	9 44.4	9 36.6	8 35.8	8 40.2	4 46.6	2 60.1	.8 63.0	76.7	147	85.8	73	29	9 46.6	2 41.1	1 35.9	9 39.9	4 52.7	65.9	1 77.7	96.8			
	8	5 104	85.8	55.8	86.9	18.9	15.8	80.8	89.4	98.2	91	109	248	116	92.7	101	88.9	79.2	1 76.1	80.9	92.4	102	97.1	124			
	Fuel/Air Ratio	.0025	.0052	.0082	.0133	0189	.0221	.0192	.0136	.0078	.0045	.0022	.0002	.0021	.0049	.0094	.0151	.0206	.0224	.0193	.0123	6900	.0037	.0014			
ion	NO _X	5.2	9.0	13.4	1.3 19.9	27.5	31.6	27.4	20.2	0.9 12.9	8.1	5.0	2.0	4.8	8.8	15.5	22.1	30.0	32.8	28.0	18.9	12.0	7.4	3.8			
Composition	ON	8.0	6.0	1.2		1.5	1.5	1.4	1.2		0.8	0.5	0.4	0.8	6.0	1.2	1.5	2.1	2.1	2.1	1.8	1.6	1.4	1.2			
Gas Co	P MG		-	951	1210	1399	1594	1558	1292	696	589	371	117	398	739	1139	1430	1717	1619	1563	1323	942	809	315			
Measured	00 ≉	0.48	66.0	1.54	2.56	3.68	4.32	3.71	3 2.60	1.46	0.84	0.42	90.0	0.40	0.92	1.76	2.88	4.00	4.37	3.75	2.32	1.28	69.0	0.27			
-	D mdd	282	476	823	1220	1574	1771	1635	1283	808	435	265	99.2	271	487	1000	1409	1727	1799	1650	1192	739	384	204			
Radial	Position in.	-17.41	-14.20	-10.98	- 7.75	- 4.53	- 1.39	2.09	5.27	8.50	11.72	14.94	-20.51	-17.26	-13.83	-10.55	- 7.28	- 4.01	- 0.91	2.35	5.96	8.87	12.51	15.58			
	Probe No.	1	-	-	-	-	-	-	-	-	1	-	2	2	2	2	2	2	2	2	2	2	2	2			

Table 11. Summary of Plume Measurements, J85-5, Run No. 7-3.

Run Date 3/1/74 , Power Setting MID A/B, Axial Station 7.5 ft

		-	_	_	-	_	_	_		_	_	_	_	-			_	_	_	_	_		_	_	_	_	
	NO _x (x 10 ⁻⁵)	0	0.025	0.117	0.308	0.741	1.33	1.98	1.60	0.803	0.421	0.127	0.053	900.0	0	690.0	0.265	0.745	1.35	2.06	1.74	0.946	0.403	0 .108	0	0	
-in.2	NO (× 10 ⁻⁵)	0	0.005	0.037	0.134	0.419	0.812	1.38	1.02	0.438	0.162	0.032	0.007	0	0	0.021	0.092	0.421	0.819	1.37	1.19	0.516	0.177	0.032	0	0	
te, 1b/sec-in	HC (× 10 ⁻⁶)	0	0.528	1.43	2.14	2.58	2.32	1.72	2.18	2.56	2.92	1.43	0.920	0.219	0	1.08	2.30	26.2	2.34	1.72	1.58	2.58	2.58	1.32	0	0	
Flow Rate,	CO (× 10 ⁻⁴)	0	900.0	0.222	0.453	0.782	1.02	1.04	1.04	0.810	0.535	0.227	0110	0.016	0	0.154	0.465	1.06	1.36	1.24	1.23	1.12	0.539	0.190	0	0	
	Fue1 (× 10 ⁻³)	0	0.12	0.53	1.34	3.22	5.80	8.62	7.26	3.65	1.62	0.53	0.23	0.03	0	0.30	1.15	3.24	5.85	8.59	7.91	4.30	1.61	0.40	0	0	
Total	(Meas)																										
Total		819	783	066	1318	1846	2338	2870	2656	1991	1429	1026	840	646	683	606	1292	1880	2366	2897	2803	2126	1450	941	737	570	
Static		13.57																								•	
Total	Press	13.57	13.64	14.00	14.82	17.04	20.90	25.07	22.76	17.40	15.08	13.95	13.74	13,59	13.57	13.76	14.54	16.93	20.82	24.76	23.51	18.27	15.01	13.86	13.57	13.57	
×	NO _x	1.6	2.1	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.6	2.4	2.3	1.9	2.0	2.3	2.3	2.3	2.3	2.4	2.2	2.2	2.5	2.7	2.3	1.9	
n Inde	NO 1b Fue	0	0.4	0.7	1.0	1.3	1.4	1.6	1.4	1.2	1.0	9.0	0.3	0	0.4	0.7	8.0	1.3	1.4	1.6	1.5	1.2	1.1	8.0	0.4	0	
Emission Index	HC 1b/1000	8.0	4.4	2.7	1.6	8.0	0.4	0.2	0.3	0.7	1.8	2.7	4.0	7.3	6.3	3.6	2.0	6.0	0.4	0.2	0.2	9.0	1.6	3.3	5.5	11.6	
Ē	C0 1b/	49.4	49.2	41.9	33.8	24.3	17.5	12.1	14.3	22.2	33.0	42.9	47.7	54.7	58.2	51.4	40.4	32.6	23.3	14.4	15.6	26.1	33.5	47.6	51.2	53.1	
	Fuel/Air Ratio	.0012	.0031	.0064	.0110	2610.	.0275	.0373	.0333	.0216	.0126	6900	.0040	.0015	6100.	.0052	9010.	.0200	.0280	.0379	.0361	.0239	.0130	.0057	.0025	0000	
_	NO _X	1.3	4.1	8.8	15.9	0.7	8.5	51.9	44.4	29.7	20.2	0.4	0.9	1.9	2.5	7.6	5.2	8.4	40.0	54.2	8.8	32.8	20.5	8.6	3.7	6.0	
ositio	NO N	0	6.0	2.7	6.6	15.2 27.0	23.3 38	35.0 5	28.2 4	10.2 2	7.7 2	2.8 10.4	7.0	0	0.5	2.2	5.3 15.2	15.5 28.4	24.4	37.3 5	32.9 48.8	17.9 3	8.62	2.8	0.7	0	
Comp	HC P	32.1	29.0	36.2	36.0	4	-	2	-	28.5	46.3	38.6	33.6	24.7	6.4	38.9	0.4	2	22.7	16.4	9	27.7	42.5	39.3	29.2	8.8	
red Ga	CO ₂ ′ F	0.27 22	0.64	1.32	2.27 36.	3.99 29	5.78 20	7.94 16	7.05 18	4.50	2.61	1.42	0.83	0.33	0.40 26	1.07	2.18 44	4.10 36.	5.88 2	8.03 1	7.66 17	4.98	2.68 4	1.18 3	0.52 2	0.16 18	
Measured Gas Composition	D mdd	6.89	163	283	392	493	511	485	508	507	439	313	203	92.8	122	283	-	-	694	585	602	099	457	288	137	43.2	
Radial	Position in.	-23.09	-19.55	-15.99	-12.41	- 8.83	- 5.25	- 1.72	2.09	5.63	9.21	12.80	16.01	19.93	-20.34	-16.90			- 6.18 6	- 1.87 5	1.66 6		8.87		16.14	19.76	
	Probe No.	1	-	1	-	-	-	-	7	-	-	1	-	-	2	2	2	2	2	2	2	2	2	2	64	2	

Table 12. Summary of Plume Measurements, J85-5, Run No. 8.

Run Date 3-4-74, Power Setting MAX A/B, Axial Station 7.5 ft

		_	_		_		_		_	_	_	_	_	_	_			_			-		_	_	_	
	NO _x 5	0,152	0.305	0,605	1 29	2.29	2.92	2.39	1.40	0.672	0.270	0.087	0.075	0.306	0.745	1.49	2.73	3.03	1.94	0.815	0.289	0.081	0			
- in. 2	NO 5 (x 10 5)	0.117	0.201	0.403	0.826	1.58	2.04	1.70	0.859	0.374	0.168	0.051	0,051	0.201	0.442	0.917	1.91	2.15	1.27	0.456	0.182	0.051	0			
te, 1b/sec-in	HC (x 10 6)	904.0	0.525	0.672	916.0	0.789	0.973	0.852	1.07	0.747	0.559	0.283	0.286	0.573	0.828	1.15	606	976.0	699.0	0,652	0.535	0.254	0			
Flow Rate,	CX 10-4	0.195	0.358	0.629	1.46	3.01	4.22	3.66	1.90	0.889	0.380	0.120	0.122	0.412	1.04	2.25	4.08	4.69	3.07	1.19	0.404	0.122	0			
	Fuel (x 10 3)	0.507	1.05	2.24	4.59	7.89	9.73	8.52	5.37	2.49	0.931	0.257	0.220	0.955	2.76	5.73	60.6	9.76	69.9	3.26	1.07	0.254	0			
Total	(Meas)																									
Total	_	975	1241	1648	2190	2846	3207	2965	2400	1700	1160	862	845	1169	1777	2477	3093	3229	2681	1936	1283	888	101			
Static		13.67																				-				
Total	Press	14.05	14.51	15.70	18.58	22.91	25.23	23.73	19.36	16.01	14.46	13.84	13.81	14.49	16.30	19.78	24.34	25,12	20.92	16.77	14.49	13.81	13.67			
ex.	NO _X	3.0	2.9	2.7	2.8	2.9	3.0	2.8	2.6	2.7	2.9	3.4	3.4	3.2	2.7	2.6	3.0	3.1	2.9	2.5	2.7	3.2	3.6			
Emission Index	NO Ib Fuel	2.3	2.0	1.8	1.8	2.0	2.1	2.0	1.6	1.5	1.8	2.0	2.3	2.1	1.6	1.6	2.1	2.2	1.9	1.4	1.7	2.0	2.4			
Emissi	HC 1b/1000	4 0.8	1 0.5	1 0.3	8 0.2	1 0.1	.4 0.1	0 0.1	4 0.2	7 0.3	9.0 8	6 1.1	3 1.3	0.6	7 0.3	.3 0.2	9 0.1	1 0.1	9 0.1	.4 0.2	8 0.5	1.0	8 2.2			
	8	38.4	34.1	28.1	31.8	38.1	43.	43.0	35.4	35.7	40.8	46.6	55.3	43.1	37.7	39.	44.9	48.1	45.9	36.	37.8	48.1	62.			
	Fuel/Air Ratio	.0064	1010.	.0162	.0252	.0373	.0446	.0397	.0290	1710.	6800	.0046	.0043	1600.	.0183	.0304	.0423	.0451	.0343	.0209	.0107	.0051	.0023			
uo	NO _X	12.2	18.5	27.0	42.7	65.3	80.2	68.3	46.4	28.4	16.4	9.90	9.50	18.4	30.1	48.5	75.4	84.2	60.1	32.4	18.5	10.3	5.50			
mposition	NO	9.3	12.9	17.9	27.2	46.0	56.7	47.0	29.1	16.0	10.3	5.70	6.30	11.7	18.2	30.3	53.4	58.5	39.3	18.5	11.6	6.60	3.70			
Gas Com	НС	11.4	11.2	10.9	10.6	10.4	10.3	6.6	10.0	10.4	10.7	10.9	11.8	11.3	10.4	10.0	8.6	9.7	9.7	9.9	10.6	10.8	10.9			
Measured (202	1.33	2.08	3.37	5.26	7.84	9.41	8.34	6.04	3.53	1.84	0.95	0.89	1.87	3.79	6.34	8.90	9.50	7.15	4.34	2.21	1.05	0.48			
	Dpm Dpm	262	363	480	851	1526	2091	1837	1001	644	384	227	253	412	730	1272	2049	2343	1683	805	427	259	157			
Radial	Position in.	-16.70	-14.04	-10.82	- 7.59	- 4.36	- 1.24	2.26	5.45	8.68	11.91	15.13	-18.54	-14.92	-11.28	- 7.64	- 3.82	0.63	3.42	7.05	10.89	14.33	17.95			
	Probe No.	-	-	-	-	1	1	1	-	-	-	1	2	2	2	5	2	2	2	2	2	2	2			

Table 13. Summary of Plume Measurements, J85-5, Run No. 9-1.

Run Date 3/4/74 , Power Setting MIL , Axial Station 15 ft

(Caic) (Weas) Fuel CO 4 HC 6 O	-	Radial	Meas	b parni	Measured Gas Composition	positi	lon		B.	ission	Emission Index		Total	Static	Total	Total		Flow Ra	Flow Rate, 1b/sec-in.	-1n.2	
49.4 110 2.8 4.4 10.4 11.0 2.8 4.9 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.2	Positi in.	uo		202) HC	NO	NO _X	Fuel/Air Ratio	CO 1b/	HC 1000	NO Ib Fuel		Press	Press	(Calc)	(Meas)	Fue1 (x 10 ⁻³)	Š	Š	NO (× 10 ⁻⁵)	NO _x (x 10 - 5)
12.2 18.0 4.3 6.6 0.011 6.3 9.2 5.3 8.2 13.70 13.40 665 0.10 0.06 0.07 0.06 0.06 0.07 0.06 0.07 0.06 0.07 0.06 0.07	-26.1		49.4		17.			.0004	7.06	23.0		13.4	13.45	13.45		595	-	-	-		
184.0 57 21.5 6.3 11.2 .0027 58.3 5.4 4.1 7.0 14.02 13.22 823 740 0.25 0.24 1.1 1.1 1.1 1.2 1.2 1.0 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.3	-20.3	0	83.6			_	9.9		63.0		5		13.70	13.40		665	0.10	90.0	6.0	0,05	0.08
18.1.3 68.2 61.2 61.2 61.3 13.6 63.3 14.56 13.2 61.1 15.15 13.24 867 0.48 0.24 0.25 13.2 61.1 15.15 13.24 867 0.68 0.35 22 11.2 13.24 867 0.68 0.35 22 15.15 13.24 867 0.68 0.35 23 61.1 15.26 13.24 869 0.47 0.35 22 15.26 13.27 869 0.47 0.35 23 15.26 13.27 869 0.47 0.35 23 14.4 15.21 13.27 869 0.47 0.25 13 13.27 869 0.47 0.25 13 13.27 13.27 869 0.47 0.25 13 13.27 13.24 13.27 869 0.47 0.25 13 13.47 13.43 13.43 13.43 13.43 13.43 13.43 13.43 13.43 13.43 13.43 13.43	-15.1	8	121.3						56.3	5.4		7.0	14.02	13.32		740	0.25	0.14	1.4	0.10	0.18
18.1.3 68 23.4 6.9 13.0 6033 51.5 5.1 15.16 13.24 867 0.68 0.35 22 18.1.3 68 22.8 7.0 12.9 0.033 51.7 3.2 6.1 15.26 13.24 869 0.70 0.36 22 112.9 3.2 1.2 0.027 5.3 4.3 6.1 15.26 13.24 869 0.70 0.36 0.35 112.9 3.5 1.2 0.069 7.0 0.07 0.07 0.05 0.07 0.05 0.07 0.05 0.07 0.05 0.01 0.01 0.01 0.01 0.02	-10.5	12	154.7					.0027	52.9	4.1		6.3	14.56	13.27		823	0.45	0.24	1.9	0.16	0.28
181.9 688 22.8 7.0 12.9 0033 51.7 3.3 6.1 15.26 13.27 869 0.70 0.36 1 112.9 3.3 11.3 0027 53.3 3.7 3.3 6.4 14.61 13.27 869 0.47 0.25 1 112.9 3.3 11.3 0027 53.3 3.7 3.3 6.4 14.61 13.27 869 0.47 0.25 1 112.9 3.3 10.9 4.8 0.016 0.020	-7.5	1	181.3			Lancoul.		.0033	51.5	3.4	3.2	6.1	15.15	13.24		867	0.68	0.35	2.3	0.22	0 42
154.7 56 21.2 5.8 11.3 0027 53.3 3.7 3.1 4.4 4.6 14.61 13.27 809 0.47 0.25 1.2 15.4 4.8 8.4 0016 62.1 5.4 4.4 7.6 14.00 13.32 724 0.02 0.12 1 47.9 .21 17.4 3.5 6.0 0009 70.6 8.1 5.4 4.4 7.6 14.0 13.42 13.43 606 0.07 0.02 0.03 <td< td=""><td>10.0</td><td>8</td><td>9.181</td><td></td><td>22.8</td><td></td><td></td><td>1</td><td>51.7</td><td>3.3</td><td>3.3</td><td>6.1</td><td>15.26</td><td>13.24</td><td></td><td>869</td><td>0.70</td><td>0.36</td><td>2.3</td><td>0.23</td><td>0 43</td></td<>	10.0	8	9.181		22.8			1	51.7	3.3	3.3	6.1	15.26	13.24		869	0.70	0.36	2.3	0.23	0 43
112.9 32 19.4 4.8 8.4 0.016 62.1 5.4 4.4 7.6 14.00 13.32 724 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.03 10.00 17.1 8.6 13.43 606 0.07 0.03 0.01 0.02 0.02 0.03 10.00 17.1 8.6 13.43 606 0.01 0.0	12.6	4	154.7			_	11	.0027	53.3	3.7	3.3	6.4	14.61	13.27		808	0.47	0.25	1.7	0.16	0 30
47.9 20. 17.4 3.5 6.0 0.009 70.6 8.1 5.3 9.3 13.64 13.43 606 0.07 0.05 24.4 .09 16.4 2.5 4.1 .0003 10.0 17.1 8.6 14.0 13.47 13.45 13.61 580 0.01 0.01 0.01 24.4 .01 15.0 1.7 2.4 0 - - 44.4 - 13.45 13.51 580 0.01 0.	17.4	6	112.9					9100'	62.1	5.4	4.4	7.6	14.00	13.32		724	0.20	0.12	1.1	60.0	0.15
47.9 0.0 16.4 2.5 4.1 0.0 17.1 8.6 14.0 13.45 13.45 13.45 13.45 13.45 13.51 580 0.01 0.01 0.01 25.5 .02 10.9 2.0 2.3 0 - - 44.4 - 13.45 13.51 548 - </td <td>22</td> <td>82</td> <td>75.9</td> <td></td> <td></td> <td></td> <td>6.0</td> <td>6000</td> <td>9.07</td> <td>8.1</td> <td>5.3</td> <td></td> <td>13.64</td> <td>13.43</td> <td></td> <td>909</td> <td>0.07</td> <td>0.05</td> <td>9.0</td> <td>0.37</td> <td>0.07</td>	22	82	75.9				6.0	6000	9.07	8.1	5.3		13.64	13.43		909	0.07	0.05	9.0	0.37	0.07
24.4 0.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 2.0 2.3 0 - 27.5 - 13.45 13.47 558 - <th< td=""><td>27.7</td><td>4</td><td>47.9</td><td></td><td></td><td></td><td></td><td>.0003</td><td>100.0</td><td>17.1</td><td></td><td>14.0</td><td>13.47</td><td>13.45</td><td></td><td>580</td><td>0.01</td><td>0.01</td><td>0.2</td><td>0.01</td><td>0.01</td></th<>	27.7	4	47.9					.0003	100.0	17.1		14.0	13.47	13.45		580	0.01	0.01	0.2	0.01	0.01
25.5 10. 10.6 2.0 2.3 0 - 27.5 - 13.45 13.47 558 - </td <td>33.4</td> <td>9</td> <td>24.4</td> <td></td> <td>15.0</td> <td></td> <td>2.4</td> <td>. 0</td> <td>-</td> <td></td> <td>44.4</td> <td>•</td> <td>13.42</td> <td>13.51</td> <td></td> <td>543</td> <td>1</td> <td>1</td> <td></td> <td>,</td> <td></td>	33.4	9	24.4		15.0		2.4	. 0	-		44.4	•	13.42	13.51		543	1	1		,	
88.9 2.6 11 10.6 2.9 4.5 0.004 93.1 9.4 8.4 13.1 13.45 13.45 13.45 13.45 13.45 13.45 13.45 13.45 13.45 689 0.10 0.02 <	-30.5	30	25.5				2.3	0	-		27.5	1	13.45	13.47		558	,	-			1
88.9 2.6 11.4 4.6 7.1 0.012 66.5 4.2 5.6 8.8 13.69 13.37 689 0.10 0.07 0.07 0.07 0.024 3.7 2.3 4.0 6.6 14.19 13.29 796 0.13 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.19 0.03 0.18 0.1 0.10 0.18 0.18 0.19 13.13 0.18 0.14 0.18 0.14 49.2 1.6 3.1 5.8 13.13 978 0.74 0.38 1 0.22 1.08 13.13 978 0.74 0.38 1 0.20 1.08 0.1 0.10 0.51 1 0.20 1.08 1.08 0.13 0.18 0.14	-24.7	80	52.5				4.5		93.1	9.4	8.4	13.1	13.53	13.45		613	0.02	0.02	0.2	0.02	0.03
141.0 .50 12.9 6.2 10.4 .0024 54.7 2.5 4.0 6.6 14.19 13.29 796 0.33 0.18 0.0 198.9 .76 13.9 1.6 1.6 1.6 1.5 13.16 908 0.74 0.38 1 228.5 .90 14.8 8.6 16.2 .0043 49.2 1.6 3.1 5.8 13.13 978 1.06 0.52 1 227.3 .89 14.5 8.5 16.1 .0043 49.5 1.6 3.1 5.8 13.13 956 1.04 0.51 1 227.3 .89 14.5 13.13 6.0 15.32 13.16 90.3 0.82 0.42 1 152.4 .52 14.5 .03 .52 2.4 3.0 6.8 14.48 13.21 796 0.24 0.24 0.24 0.24 0.24 0.24 0.24 0.24 0.24 <	-19.5	9	88.9					.0012	66.5	4.3			13.69	13.37		689	0.10	0.07	0.4	90.0	60.0
198.9 7.7 14.1 .0036 50.9 1.8 3.3 6.0 15.08 13.16 908 0.74 0.38 1 228.5 .90 14.8 8.6 16.2 .0044 49.2 1.6 3.1 5.8 15.87 13.13 978 1.06 0.52 1 227.3 .89 14.5 8.5 16.1 .0043 49.5 1.6 3.1 5.8 15.31 956 1.04 0.51 1 204.7 .78 14.1 7.5 14.5 .0037 51.2 1.8 3.1 6.0 15.32 13.16 90.3 0.82 0.42 1 152.4 .52 12.9 5.0 1.2 1.8 3.1 6.0 15.32 13.16 90.3 0.82 0.42 1 152.4 .52 11.2 0.025 52.4 3.6 6.8 14.48 13.74 13.34 680 0.11 0.01 0.02 </td <td>-14.1</td> <td>9</td> <td>141.0</td> <td></td> <td>12.</td> <td></td> <td></td> <td>.0024</td> <td>54.7</td> <td></td> <td>4.0</td> <td>9.9</td> <td>14.19</td> <td>13.29</td> <td></td> <td>962</td> <td>0.33</td> <td>0.18</td> <td>8.0</td> <td>0.13</td> <td>0.22</td>	-14.1	9	141.0		12.			.0024	54.7		4.0	9.9	14.19	13.29		962	0.33	0.18	8.0	0.13	0.22
228.5 90 14.8 8.6 16.2 0.044 49.2 1.6 3.1 5.8 15.87 13.13 978 1.06 0.52 1 227.3 89 14.5 8.5 16.1 0.043 49.5 1.6 3.1 5.8 15.82 13.13 956 1.04 0.51 1 204.7 7.8 14.1 7.5 14.5 0.037 51.2 1.8 3.1 6.0 15.32 13.16 90.3 0.82 0.42 1 152.4 .52 12.9 5.9 11.2 .0025 56.2 2.4 3.6 6.8 14.48 13.21 796 0.42 0.24 1 92.3 .25 11.2 4.3 6.8 13.74 13.34 680 0.11 0.76 0 45.4 .07 9.7 12.2 4.2 9.7 17.4 13.48 13.45 38.2 0.01 0.01 0 0 0 <td>-9.2</td> <td>8</td> <td>198.9</td> <td></td> <td></td> <td></td> <td>14.1</td> <td>.0036</td> <td>50.9</td> <td>1.8</td> <td>3.3</td> <td>6.0</td> <td>15.08</td> <td>13.16</td> <td></td> <td>806</td> <td>0.74</td> <td>0.38</td> <td>1.3</td> <td>0.24</td> <td>0.44</td>	-9.2	8	198.9				14.1	.0036	50.9	1.8	3.3	6.0	15.08	13.16		806	0.74	0.38	1.3	0.24	0.44
227.3 .89 14.5 8.5 16.1 .0043 49.5 1.6 3.1 5.8 15.82 13.13 956 1.04 0.51 1 204.7 .78 14.1 7.5 14.5 .0037 51.2 1.8 3.1 6.0 15.32 13.16 903 0.82 0.42. 1 152.4 .32 12.9 5.9 11.2 .0025 56.2 2.4 3.6 6.8 14.48 13.21 796 0.42 0.24 1 92.3 .25 11.2 4.3 7.1 .0012 69.5 4.2 5.3 8.8 13.74 13.34 680 0.11 0.76 0 45.4 .07 2.2 4.6 .0002 121.5 13.2 13.48 13.45 582 0.01 0.01 0	-3.9	6	228.5				16.2	.0044	49.2	1.6	3.1	5.8	15.87	13.13		978	1.06	0.52	1.7	0.33	0.61
204.7 7.8 14.1 7.5 14.5 .0037 51.2 1.8 3.1 6.0 15.32 13.16 903 0.82 0.42 1 2 0.42 0.12 0.82 0.42 0.12 1 0.25 11.2 0.025 56.2 2.4 3.6 6.8 14.48 13.21 796 0.42 0.24 1 0.24 0.12 0.24 1 0.24 1 0.24 0.12 0.24 1 0.24 0.24 0.24 1 0.24 0.24 0.24 0.24 1 0.24 0.24 0.24 1 0.24 0.24 0.24 1 0.24	5.6	9	227.3			œ	16.1	.0043	49.5	1.6	3.1		15.82	13.13		926	1.04	0.51	1.7	0.32	09 0
152.4 .52 12.9 5.9 11.2 .0025 56.2 2.4 3.6 6.8 14.48 13.21 796 0.42 0.24 11. 92.3 .25 11.2 4.3 7.1 .0012 69.5 4.2 5.3 8.8 13.74 13.34 680 0.11 0.76 0.0 45.4 .07 2.2 4.6 .0002 121.5 13.6 9.7 17.4 13.45 13.45 582 0.01	10.5	2	204.7			7		.0037	51.2	1.8				13.16		903	0.82	0.42	1.5	0.25	0.49
92.3 .25 11.2 4.3 7.1 .0012 69.5 4.2 5.3 8.8 13.74 13.34 680 0.11 0.76 0.0 45.4 .07 2.2 4.6 .0002 121.5 13.6 9.7 17.4 13.48 13.45 582 0.01 0.01 0.01	15.0		152.4	. 52		5	11.2	.0025		2.4	3.6			13.21		962	0.42		1.0	0.15	0.29
45.4 .07 9.7 2.2 4.0 .0002 121.5 13.0 9.7 17.4 13.48 13.45 582 0.01 0.01	20.2	2	92.3		11.2	4	7.1	.0012	69.5	4.2	5.3					089	0.11	92.0		90.0	0.10
	25.9	6	45.4			2	4.0	.0002	121.5	13.0	9.7	17.4	13.48	13.45		582	0.01	0.01	0.1	01.0	0.02
	×																				

NOTE: Radial position adjusted for symmetry.

Table 14. Summary of Plume Measurements, J85-5, Run No. 9-2.

ţţ
15
Station
Axial
A/B
MIN A/B
Setting
Power
3/7/74
Date
Run

	Radial	Measu	Measured Gas C	as Com	omposition	uo		E	Emission Index	Index		Total	2,404	Total	Total		Flow Rate,	te, 1b/sec-in	2-in.2	
Probe No.	Δ.	00	202	HC	NO	NO _X	Fuel/Air Ratio	8	HC HC	NO	No.	-	Press	(Calc)	(Neas)	Fue1	00 %	HC_6,	NO 5	NO _x 5
-	-43.01			78.1	6.0	1.2		1		in i	1	10	13 48		420	2 3	01 43	01 43	2	, 01 11
1	-34.79	140	140 0.08	114	1.2	3.4	.0004	256.8	104.6	3.6	10.1	13 39	13.43		584					
1	-26.64	205	205 0.19	218	1.3	4.4	0100.	-	95.9	1.9		13.50	13.40		658	0.05	0 0	× 4	10 0	0 03
-	-18.88	372	372 0.49	443	1.7	7.5	.0026	130.7	78.4	1.0	4.3	13.88	13.30		841	0.28	0.37	22 0	0 03	0 12
1	-11.70	651	651 0.94	635	1.7	11.5	.0051	121.3	6. 69	0.5	3.6	14.80	13.19		1018	0.87	1.06	52.1	0.04	0.31
-	8.20	745	745 1.10	704	1.8	12.8	6500.	118.9	57.0	0.5	3.4	15.34	13.19		1053	1.19	1.41	8.79	90.0	0.40
1	11.96	009	600 0.84	615	1.5	10.6	.0045	124.5	64.5	0.5	3.6	14.59	13.24		932	0.73	0.91	47.1	0.04	0.26
-	19.33	382	382 0.48	396	1.4	7.4	.0026	136.7	71.4	8.0	4.4	13.83	13.32		492	0.27	0.37	19.3	0.02	0.12
-	26.98	219	219 0.19	228	1.1	4.5	0100.	189.8	99.9	1.5	6.4	13.50	13.43		639	0.04	90.08	4.0	0.01	0.03
1	35.41	76.0 0.02	0.05	95.4	9.0	1.9	0000		,	,	,	13.42	13.51		549			,		1
1	43.37	39.2		45.6	9.0	1.0	-		,	-	,	13.42	13.51		525			1	,	
2	-44.86	6.2	,	16.1	0.4	0.7	,	1	1		-	13.43	13.50		516	1			1	1
2	-36.71	32.8	,	31.3	8.0	1.1		1	-			13.43	13.47		536	-				
22	-28.07	139	139 0.08	130	1.2	2.9	.0004	249.0	117.4	3.5	8.5	13.45	13.45		604	0.01	0.05	1.17	0	0.01
2	-19.71	305	305 0.33	339	1.4	5.8	8100.	156.1	87.0	1.2	6.9	13.66	13.34		742	0.15	0.23	13.1	0.02	0.07
2	-11.22	209	0.83	624	2.0	10.3	.0045	127.6	66.3	0.7	3.6	14.32	13.21		952	0.64	0.82	42.4	0.04	0.23
2	-2.00	894	894 1.33	888	2.1	15.0	1200.	118.5	9. 69	0.5	3.3	15.74	13.16		1169	1.53	1.81	91.6	0.08	0.50
2	6.28	918	918 1.35	889	2.1	15.3	.0073	119.4	58.8	0.5	3.3	16.40	13.10		1186	1.80	2.15	105.8	60.0	0.59
2	14.25	641	641 0.83	611	1.8	9.6	.0045	133.3	64.2	9.0	3.3	14.58	13.16		928	0.75	1.0	48.2	0.05	0.25
2	21,89	204	204 0.15	215	1.2	3.6	8000	210.6	111.8	2.0	6.1	13.51	13.39		654	0.04	0.08	4.47	0.01	0.24
2	31.05	20.2	,	30.3	0.5	1.1		,	1	1	,	13.40	13.45		527	1	-		ı	_
2	39.06	2.8	,	11.2	0.3	9.0	,	ı	1		,	13.43	13.45		514	1	-	-	-	-
	NOTE:		dial p	ositio	n adju	sted	Radial position adjusted for symmetry	у.												

Table 15. Summary of Plume Measurements, J85-5, Run No. 9-3, 10-1.

		NO _x 5 (x 10)	,	0.02	0.11	0.28	0.58	0 65	0.33	0.10	-		-			0.10	0.41	0.83	1.08	0.68	0.20	90.0		1		
	-1n,2	NO 5 (x 10 5)		0.14	0.07	0.19	0.37	0.41	0.20	0.07	-		-	-		08.0	0.29	0.61	0.80	0.45	0.18	0.05				
	te, 1b/sec-in.	HC_6 (× 10 -6)	-	0.1	0.5	1.0	1.5	1.5	1.0	0.4	-	1	-	-	-	9.0	1.7	2.5	2.9	2.5	1.1	0.3	-	1		
	Flow Rate,	CO (x 10-4)	-	0.02	0.10	0.28	0.47	0.52	0.27	0.08	_	-	-	-	-	0.09	0.41	0.76	0.93	0.64	0.21	0.05	,	,		
ä		Fuel (× 10 ⁻³)		0.03	0.28	0.89	1.93	2.17	0.93	0.22	-	-	-			0.19	1.00	2.45	3.18	1.79	0.54	0.10	,	,		
15	Total	(Meas)	586	673	860	1120	1377	1362	1083	191	809	531	511	534	639	773	1070	1491	1592	1322	967	663	547	512		
Power Setting MID A/B, Axial Station	Total	(Calc)																								
ID A/B	Statio		13.45	13.43	13.38	13.27	13.17	13.14	13.22	13.35	13.45	13.45	13.48	13.68	13.63	13.58	13.42	13.29	13.24	13.37	13.50	13.60	13.68	13.63		
ting M	Total	Press	13.45	13.45	13.64	14.10	15.21	15.56	14.29	13.58	13.42	13.36	13.36	13.66	13.61	13.72	14.50	16.00	16.97	15.53	14.11	13.69	13.64	13.64		
er Set	*	NO _X	12.2	6.2	4.0	3.2	3.0	3.0	3.5	4.6	7.3	37.2	42.9	36.5	9.1	5.3	4.1	3.4	3.4	3.8	3.7	0.9	16.9	43.0		
Po.	n Inde	NO 1b Fue	10.2	4.5	2.5	2.1	1.9	1.9	2.2	3.2	5.6	34.3	39.8	36.0	8.1	4.2	2.9	2.5	2.5	2.5	3.3	5.4	16.3	42.7		
3/7/74	Emission Index	1b/1000	8.6	3.9	1.8	1.1	0.8	2.0	1.1	1.9	3.8	26.2	31.8	18.0	4.6	3.2	1.7	1.0	6.0	1.4	2.0	2.9	8.3	20.9		
		8 2	69.2	50.6	36.6	31.1	24.1	24.1	28.6	35.1	43.2	101.7	45.3	0.06	59.7	47.0	40.8	31.2	29.3	35.8	38.4	48.0	49.0	58.6		
Run Date		Fuel/Air Ratio	9000	7100.	.0043	9200	.0114	.0115	.0071	.0035	.0013	.0001	.0000	.0002	.0015	.0037	.0072	.0118	.0129	,0094	.0053	.0025	9000	.0001		
		NO _X	5.5	7.2	10.9	15.2	21.1	21.5	15.6	10.5	9.9	4.5	4.1	7.4	9.4	12.8	18.8	25.5	27.5	22.1	12.3	8.6	7.7	8.9		
	Composition	NO	4.6	5.2	6.9	10,0	13.6	13.9	10.0	7.2	5.1	4.2	3.8	7.3	8.4	10.1	13.2	18.4	20.2	15.0	10.9	8.9	7.4	6.8		
	Gas Com	1. 5		14.8	16.2	18.0	17.8	17.	15.9	14.2	11.5	10.4	10.0	11.9	15.5	25.4	25.9	24.7	23.6	26.7	22.4	15.8	12.3	10.9		
	nred 6	202	0.14	0.37	06.0	1,58	2.36	2.39	214 1.47	0.74	0.29	0.04	0.03	90.0	0.33	87.0	1.48	2,45	2.67	1.94	1.09	0.53	0.14	0.05		
	Meas	co co	51.6	96.0	168	250	289	292	214	132	65.2	20.2	7.2	30.0	102	187	310	389	398	354	214	131	36,6	15.3		
	Radial	Position in.	-37.19	-28.81	-20.41	-11.77	-3.92	8.86	14.72	22.88	31.25	39.75	47.85	-40.42	-31.88	-23.37	-15.02	-7.62	6.02	12.54	20.70	29.12	36.67	46.06		
		Probe No.	1	-	-	-	-	-	1	-	1	1	1	2	2	. 2	2	2	2	2	2	27	2	2		

NOTE: Radial position adjusted for symmetry.

Table 16. Summary of Plume Measurements, J85-5, Run No. 10-2.

ft
15
Station
Axial
MAX A/B,
Setting
Power
3/11/74
Date
Run

_	_	7	_		_						_	_			-	-	-	_			-				_	-	
	NO _x 5	(x 10)		0.03	60.0	0.24	0.55	29.0	0.35	0.11	0.04	,		1	0.02	0.08	0.30	0.74	0.93	0.51	0.17	60'0					
2	NO_5		-	0.03	0.07	0.19	0.42	0.51	0.28	0.07	0.03				0.02	90.0	0.23	0.53	0.67	0.37	0.14	0.03		-			
Flow Rate, 1b/sec-in.	HC 6	(OI X)		0	0	0	0	0	0	0	0		1		0	0	0	0	0	0	0	0	-				
Flow Rat	60.	(X 10)		0.02	90.0	0.17	0.31	0.37	0.24	0.07	0.03			-	0.01	0.07	0.23	0.41	0.48	0.35	0.16	0.04	-	-			
	Fuel 3	(n1 x)		90.0	0.27	0.84	1.90	2.32	1.20	0.33	60.0		-	-	0.03	0.24	1.02	2.54	3.21	1.77	0.56	0.11	-	1			
Total		1	495	200	543	206	1961	1352	1307	894	699	551	481	539	641	865	1332	1886	-				-	-			
Total	(Calc)	×	537	658	898	1158	1493	1575	1253	606	069	528	489	510	580	836	1232	1716	1848	1459	878	738	535	206			
Static	Press	psia	13.74	13.71	13.58	13.45	13.32	13.35	13.40	13.56	13.69	13.71	13.74	13.68	13.63	13.55	13.42	13.26	13.24	13.29	13.47	13.60	13.66	13.68			,
Total	Press	psia	13.61	13.72	13.83	14.31	15.48	16.10	14.75	13.85	13.72	13.64	13.64	13.66	5.0 13.69	13.82	14.48	16.08	17.03	15.32	14.11	13.72	13.61	13.66			
*	NO		6.9	4.1	3.5	2.9	2.9	2.9	2.9	3.2	4.3	8.3	-	1	5.0	3.5	2.9	2.9	2.9	2.9	3.1	3.7	7.9	7			
Emission Index	NO.	Ib Fue	6.7	3.5	2.6	2.3	2.2	2.2	2.3	2.2	3.1	6.9	-	1	5.3	2.6	2.3	2.1	2.1	2.1	2.5	2.8	7.0	•			
nissio	1 1	1b/1000	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0.	0	0	-			
ā	8	1	36.5	30.0	23.2	20.0	16.4	16.0	19.6	22.3	29.7	47.1	-	•	41.5	31.1	22.6	16.0	15.0	19.5	28.5	34.4	51.9	-			
	Fuel/Air	Ratio	.0004	.0018	.0046	.0088	.0137	.0150	1010.	.0053	.0021	.0002	-	-	6000	.0040	8600	.0172	.0193	.0132	.0064	.0026	.0003	-			
	NOX	B.d.d	2.2	4.8	10.1	16.2	24.4	8.92	18.5	10.9	5.9	2.0	6.0	1.5	3,2	9.0	18.2	30.8	34.6	23.4	12.5	6.3	2.4	1.0			
mposition	NO	7	2.1	4.1	7.5	12.8	19.1	20.4	14.3	7.5	4.3	1.7	8.0	1.4	3.4	6.7	14.3	22.8	24.6	17.2	10.01	4.7	2.1	1.3			
		7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Measured Gas Co	200	7	0.10	0.38	96.0	1.83	2.86	3.12	2.11	1.11	0.45	0.08	0.00	0.03	0.21	0.84	2.05	3.59	4.04	2.75	1.32	0.55	0.10	0.02			
Measu	8	_	19.2	58.6	113	185	236	252	509	125	9.19	18.6	4.5	12.2	44.4	134	234	291	306	271	192	95.9	26.0	7.1			
Radial	Position	T	-41.98	-32.98	-23.96	-13.37	-5.14	7.38	13.31	22.27	31.19	40.41	49.05	-43.12	-34.16	-25,29	-16.46	-8.01	4.19	11.63	20.35	29.31	37.89	46.62			
	Probe	+	1	1	1	1	1	1	1	-	-	1	1	2	2	27	2	2	2	2	2	2	2	2			

NOTE: Radial position adjusted for symmetry Thermocouple #2 out after -8.01 position.

Table 17. Summary of Plume Measurements, J85-5, Run No. 11-1.

t	
30	1
Station	
Axial	-
MTI	WALL.
Setting	9
Power	
3/19/74	1 1 1 1
Date	-
n	

Table 18. Summary of Plume Measurements, J85-5, Run No. 11-2.

Run Date 3/12/74, Power Setting MIN A/B, Axial Station 30 ft

	10	1	T	Т	T			Г				Г									T	Г	Г	Г	1	Г
	NO _x 5	_		0.03	0 07	0.10	0 12	0 08	0.04	0.02	-	-	1	0	0.03	90.0	0.13	0.12	80.0	0.02			-			-
-1n,2	NO 5	01 (1)		0.02	0.03	0.03	0.04	0.03	0.02	0.01	1	,		0	0.05	0.04	0.05	0.05	0.03	0.01		-	1			
Flow Rate, 1b/sec-in	HC_6		1	4.1	9.3	14.7	17.7	11.8	6.3	3.0		1		0	4.1	11.0	19.7	17.5	8.6	2.2						
Flow Rat	00			0.07	0.18	0.27	0.32	0.21	0.11	90.0				0	80.0	0.23	0.37	0.35	0.18	0.05	-		,			-
	Fuel3	+	1	0.04	0.12	0.19	0.23	0.14	0.07	0.03		-		00.00	0.04	0.14	0.27	0.25	0.11	0.05	-		,			
Total		1	591	634	691	731	737	200	929	623	999	538	-	-	-	-					-		-			
Total	_	510	534	563	617	655	661	617	586	990	517	504	504	513	558	618	691	029	592	540	507	503	503			
Static	_	13.61	13.58	13.58	13.56	13.48	13.51	13.53	13.56	13.61	13.61	13.61	13.66	13.66	13.55	13.55	13.52	13.55	13.52	13.58	13.63	13.66	13.63			
Total	Press	13.61	13.61	13.72	13.88	14.04	14.18	13.96	13.80	13.69	13.61	13.64	13.64	13.66	13.77	13.95	14.22	14.22	13.93	13.66	13,58	13.61	13,61			
	NOX		11.4	7.5	5.7	5.0	5.0	5.8	5.9	7.8	19.0		,	23.2	8.2	6.0	4.7	4.9	6.9	10.4	1	1	-			
Inde	ON	200	6.7	3.9	2.3	1.8	1.8	2.1	2 8	3.8	12.8	,	,	-	4.8	2.5	1.8	1.9	2.8	5.9	,		-			
Emission Index	HC I		122	103	77.5	77.4	6.91	84.2	90.4	98.2	180	,	,	244 18.3	102	78.8	72.9	8'69	88.8	111		,				
E E	8	-	241	186	152	140	141	153	159	184	368	,		406	190	163	136	138	165	231	,					
	Fuel/Air Ratio		.0003	8000	.0015	6100.	.0020	.0015	1100	7000.	1000.	-	,	0000	.0007	.0015	.0023	.0021	.0012	.0004	,	,	,			
	NO _X	2.4	3.4	4.2	5.7	6.3	6.7	5.9	4.4	4.1	2.7	2.3	2.0	2.7	4.2	6.1	7.1	8.9	5.6	3.6	2.1	1.4	1.3			
post tion	NO NO	a.	2.0	2.3	2.3	2	2,3	2.1	2.1	2.0	1.9	1.6	6.1	2.1	2.4	2.6	2.7	2.6	2.3	2.3	_	1.3	1.8			
	HC N	4	119	189	256	323	333	279	223	170	85.0	33.6	33.3	93.2	169	263	364	315	238	127	28.9	3.7	0			
Measured Gas Co.	200 H	=	0.07	0.15	0.28	0.36	0.37	0.28	0.21	0.14	0.03	0	9	0.02	0.13	0.28	0.43	0.39	0.22	60.0	0.01	0	0			
Measur	00 00	-	118	171	252	294	306	255	197	160	87.2	43.5	37.2	77.8	158	273 (342 (34	222	133	9.99	0.6	3.3			
Radial	Position in.	18	-49.49	-36.93	-23.70	-11.85	11.34	20.52	33.00	46.42	98.65	72.43	-61.36	-47.29	-32.97	-18.75	- 5.92	12.24	26.37	40.47	54.89	68.62	82.84			
_	Probe P	-	1	1	-	-	-	-	-	-	-	7	2	2	2	2	2	2	2	2	2	2	2			

Table 19. Summary of Plume Measurements, J85-5, Run No. 11-3, 12-1.

Run Date 3/13/74 Power Setting MID A/B, Axial Station 30 ft

1																				
_	Radia	Meas	Measured G	Gas Composition	positie	20		ä	Emission Index	n Inde	×	Total		Total	Total		Flow Re	Flow Rate, 1b/sec-in	- in. 2	
•	Position in.	Dpm CO	202	HC	Wd.	NOx	Fuel/Air Ratio	8	HC NO 1b Fue	NO di	No.	Press	Press	(Calc)	(Meas)	Fuel ₃ (x 10 ⁻³)	00 ×	HC_6 (x 10_6)	NO (x 10 5)	No x
	-72.60	11.3	U	0	1.6	1.7		-	-	•	-	13.61	13.61	208	529					
1	-59.47	28.4	0.02	0	2.3	2.5	,	-	-		•	13.61	13.61	516	527	-	-		,	1
	-46.73	8.09	0.15	0	3.0	4.2	9000	78.4	0	6.3	6.8	13.69	13.58	564	525	0.03	0.24	0	0.02	0 03
	-32.79	86.2	0.34	0	3.6	6.2	.0015	49.7	0	3.5	5.9	13.80	13.53	647	543	0.10	0.50	0	0.04	90.0
	-19.49 106.1	106.1	0.41	0	4.1	7.0	6100.	50.3	0	3.2	5.5	13.99	13.51	682	198	0.18	0.91	0	90.0	0.10
1	-1.75 128.	128.1	0.53	0	4.7	8.0	.0025	47.2	0	2.9	8.8	14.12	13.48	738	843	0.26	1.23	0	0.08	0.12
1	11.20	11.20 130.8	0.55	0	4.4	8.2	,0026	46.5	0	2.6	8.4	14.07	13.51	746	839	0.26	1.21	0	0.07	0.12
	22.04	22.04 113.2	0.44	0	4.0	7.2	.0021	49.8	0	2.9	5.2	13.91	13.51	869	782	0.17	0.85	0	0.05	0.09
	35.43	84.8	0.29	0	3.3	5.4	.0013	56,7	0	3.6	0.9	13.77	13,51	624	713	0,08	0,45	0	0.03	0.05
	48.91	58.1	0.16	0	2.7	4.4	.0007	68.6	0	5.3	8.6	13.69	13.53	570	665	0.03	0.21	0	0.02	0.03
-	61.84	42.8	0.08	0	2.3	3.2	.0003	106.0	0	9.2	13.1	13.66	13,56	537	613	0.01	0.11	0	0.01	0.01
	74.76	17.2	0	0	1.9	2.0	-	1	-	,	-	13.64	13.61	909	569	-				
-	-70.21	50.9	0.07	11.2	3.4	3.3	.0002	136	15.0	14.8	14.5	13.64	13.60	539	-	0.01	0.14	0.2	0.01	0.01
_	-55.78	72.0	0.16	12.4	4.1	4.1	.0007	86.2	7.5	8.1	8.0	13.64	13.63	573	-	0.02	0.17	0.2	0.05	0.02
	-41.26	112	0.44	13.9	5.3	6.0	.0020	49.9	3.1	3.9	4.4	13.72	13,58	669	-	0.10	0.50	0.3	0.04	0.04
-	-26.68	175	0.75	15.3	6.7	8.7	.0036	45.2	2.0	2.9	3.7	13.85	13,52	820	1.	0.25	1.13	0.5	0.07	0.09
1	-12.54	227	1.04	16.2	7.6	11.0	.0050	42.5	1.5	2.4	3.4	14.22	13,50	668		0.52	2.21	8.0	0.12	0.18
	6.83	228	1.12	16.3	6.7	11.5	.0054	39.7	1.4	2.3	3.3	14.37	13.47	924	-	0.62	2.46	6.0	0.14	0.20
1	19.68	190	0.87	15.7	6.7	8.6	.0042	42.8	1.8	2.5	3.7	13.98	13.47	853	-	0.35	1.50	9.0	0.09	0.13
1	33.82	140	09.0	14.1	5.6	7.7	.0029	45,2	2.3	3.0	4.1	13.74	13,55	692		0.14	0.63	0.3	0.04	90.0
	48.59	88.9	0.37	13.5	4.9	5.8	7100.	46.6	3.6	4.3	5.1	13.66	13.58	299	-	0.06	0.28	0.2	0.03	0.03
1	63.04	58.0	0.13	13.0	3.6	4.1	.0005	81.9	9.2	8.5	9.6	13.61	13.60	563		0.00	0	0	0	0
	77.28	47.7	0.10	13.0	3.7	4.1	.0004	92.1	12.6	11.8	13.1	13.61	13.60	548	,	0.00	0	0	0	0
-																				

Table 20. Summary of Plume Measurements, J85-5, Run No. 12-2.

Run Date 3/13/74, Power Setting MAX A/B, Axial Station 30 ft

Plow Rate, 1b/sec-in (x 10 ⁻⁵) (
C C C C C C C C C C C C C C C C C C C	#
Plow Rate, (x 10°5) (x 0°0°5) (x 0°0	
8	1 1
Puel (x 10 ⁻³) 0.01 0 0.10 0.45 0.45 0.46 0.02 0.02 0.03 0.04 0.02 0.03 0.03 0.04 0.02 0.03 0.03 0.04 0.03 0.03 0.03 0.04 0.03 0.03	8
Total Temp "R "R 641 693 784 903 965 998 950 785 715 715 715 715 715 715	
Total Tremp (Cat.c.)	990
Sta Pre	12:00
Press Press 13.61 13.61 13.66 14.05 14.05 13.66 13.66 13.66 13.90 13.90 13.58 13.58 13.58 13.58 13.58 13.58 13.56 13.56	10.01
N N N N N N N N N N N N N N N N N N N	IT
100 1 Pure No. 1 Pure	
7.000 7.000	
00 00 11 11 12 12 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13	
Pue 1/A17 Ratio .0011 .0016 .0029 .0042 .0053 .0053 .0053 .0020 .0003 .0003 .0003 .0003 .0003 .0003 .0003 .0003 .0003	
6.0 6.3 6.0 6.0 6.3 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	
Most tion No.	
Radial Position in67.15 -54.03 -40.22 -26.91 -13.62 -6.32 -16.36 -29.92 -15.36 -55.88 -70.80 -67.16 -67.16 -52.50 -52.	
8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

Table 21. Summary of Plume Measurements, J79-15, Run No. 24-1.

Run Date 4/4/74 , Power Setting MIL , Axial Station 0 ft

																						2			_	_
	NO _x 5 (x 10)	1.15	5 46	7.41	7.20	6.76	6.92	7.18	7.41	7.23	2 90	10.1	1.50	6.90	7.79	7.72	7.58	7.49	7.45	7.77	7.80	7.12	2.95	.81		
-in.2	NO_5 (× 10_5)	1.05	4.98	6.65	6.56	6.10	6.12	6.36	6.70	6.48	2.58	.91	1.33	6.21	88.9	6.82	6.83	6.67	69.9	88.9	7.10	6.25	2.64	.75		
te, 1b/sec-in	HC_6 (x 10_)	0	0	0	0	9.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Flow Rate,	co 4 (x 10)	.02	.10	.13	.13	.14	.15	14	.15	.14	90	.02	.03	.13	.16	.15	.15	.16	.17	.16	.15	.14	90.	.02		
	Fue13	.94	4.79	6.39	6.37	6.04	6.18	6.30	6.50	6.29	2.46	662	1.16	5.70	6.49	6.43	6.32	6.29	6.37	6.37	6.34	5.79	2.20	665		
Total	(Meas)																									
Total	(Calc)	949	1523	1718	1685	1673	1663	1671	1708	1700	1217	902	972	1490	1671	1644	1609	1607	1626	1628	1634	1570	1149	842		
Static		13.70																						-		
Total	Press	15.34	26.31	31.36	32.03	30.33	31.41	31.92	32.23	31.20	19.20	15.18	15.99	32.96	33.11	33.42	1	33.53	33.53	33.48	33.11	31.30	18.84	14.95		
×	NO _X	12.2	11.4	11.6	11.3	11.2	11.2	11.3	11.4	11.5	11.8	12.7	12.9	12.1	12.0	12.0	12.0	11.9	11.7	12.2	12.3	12.3	13.4	13.6		
buI no	NO 15	11.2	10.4	10.4	10.3	10.1	9.9	10.1	10.3	10.3	10.5	11.4	11.5	10.9	10.6	10.6	10.8	10.6	10.5	10.8	11.2	10.8	12.0	12.5		
Emission Index	HC NO 1b/1000 1b Fuel	0	0	0	0	3 .10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8 =	1.9	2.0	2.0	2.1	2.3	2.4	2.3	2.3	2	2.	2.5	2.4	2.	2.	2.	2.4	2	2.	2.	2	2.	2.6	3.		
	Fuel/Air Ratio	.0057	.0138	.0168	.0163	.0161	0910	1910	7910.	9910.	.0093	.0049	0900	.0133	.0161	.0157	.0151	.0151	.0154	.0154	.0155	.0145	.0083	.0093		
uo	NO _X	43.9	98.3	122	1.14	113	111	113	118	119	69.1	40.1	49.1	101	120	117	113	112	112	117	119	111	70.4	34.1		
positi	NO	40.2	9.68	109	104	101	98.1	101	107	106	61.6	35.9	43.8	6.06	106	103	102	99.4	101	104	108	98.1	63.0	31.3		
Gas Composition	HC	0	0	0	0	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Measured G	202 *	11.6 1.20	28.4 2.91	36.2 3.55	36.9 3.44	3.39	40.7 3.36	38.8 3.39	40.03.51	40.7 3.48	23.5 1.96	13.1 1.04	15.3 1.27	32.8 2.80	41.4 3.39	3.30	38.4 3.18	40.5 3.18	42.7 3.24	3.24	3.26	38.3 3.05	22.5 1.75	0.82		
Meas	OD Wdd	11.6	28.4	36.2	36.9	39.6	40.7	38.8	40.0	40.7	23.5	13.1	15.3	32.8	41.4	40.1	38.4	40.5	42.7	41.4	37.9	38.3	22.5	12.9		
Radial	Position in.	-11.43	-9.27	-6.38	-3.87	-1.39	1.01	3.80	6.32	8.84	11.36	12.44	11.43	8.75	7.42	5.22	3.21	79.0	-1.42	-4.54	-6.02	-8.23	-10.97	-12.42		
	Probe No.	1	-	7	4	1	7	4	1	-	1	1	2	2	2	2	2	2	2	2	2	2	2	2		

Table 22. Summary of Plume Measurements, J79-15, Run No. 24-2.

Run Date 4/4/74 , Power Setting MIN A/B , Axial Station O ft

_		_										_				-	-	_	_	_	-					 -
	NO _x 5	. 53	3.93	99.9	6.22	5.38	3.95	4.88	5.83	6.31	3.43	77.	1.81	6.30	6.78	5.83	4.39	3.81	4.86	6.38	6.77	6.59	17.1			
-18.2	NO 5 (x 10 5)	.43	2.91	4.11	4.75	2.35	.31	1.78	4.51	4.05	2.18	.51	1.16	3.99	4.40	4.18	98	.21	1.73	4.90	4.75	3.99	1.03			
Flow Rate. 1b/sec-in	(× 10 ⁻⁴)	.03	.31	.91	.18	2.12	10.71	2.93	60.	.46	.26	.04	.10	.42	.29	.43	5.24	12.57	3.29	.21	.47	69.	0.11			
Flow Rat	CO 4	.07	99.	2.97	3.18	2.12	12.27	2.08	2.06	1.99	11.	.15	. 42	1.57	2.28	3.34	11.02	12.67	8.16	2.82	3.11	3.57	0.57			
	Fuel3 (x 10)	.447	3.78	8.22	11.29	11.22	10.42	11.07	11.04	8.09	3.69	.716	1.71	6.24	8.47	11.03	10.70	10.25	10.77	11.36	10.06	8.14	1.78			
Total	(Meas)																									
Total	_	824	1414	2107	3002	2927	2450	2887	2978	2106	1455	905	1122	1713	2219	2962	2697	2333	2777	3061	2649	2109	1166			
-	Press (13.68																								
1010	Press	14.46	22.50	32.28	32.34	31.92	30.89	31.46	31.87	32.03	21.52	14.82	16.87	30.05	31.92	31.76	31.14	31.09	31.45	31.92	32.18	31.92	16.77			
,	10 I	11.8	10.4	8.1	5.5	4.8	3.8	4.4	5.3	7.8	9.3	10.8	10.6	10.1	8.0	5.3	4.1	3.7	4.8	5.6	6.7	8.1	9.6			
Inde	NO 1b Fue	9.7	7.7	5.0	4.2	2.1	0.3	1.6	4.1	5.0	5.9	7.1	6.8	6.4	5.2	3.8	0.8	0.2	1.6	4.3	4.7	4.9	5.8			
Emission Index	HC 1b/1000	7.3	8.1	11.1	1.6	18.9	103	26.4	0.8	5.7	6.9	6.1	5.7	6.8	3.4	3.9	49.0	122	30.5	1.8	2.6	8.5	6.1			
8	00 1p	15.2	17.4	36.1	28.1	55.4	118	63.8	18.7	24.6	8.02	21.5	24.5	25.2	26.9	30.4	103	123	75.6	24.7	30.8	43.9	32.3			
	Fuel/Air Ratio	.0036	.0124	.0238	.0401	.0397	.0343	.0394	.0395	.0236	.0130	.0050	.0081	.0171	.0255	.0395	.0370	.0327	.0375	.0413	.0334	.0239	.0088			
	NO _X	27.72	81.2	119	134	114	6.87	104	127	113	75.4	34.9	54.5	107	125	127	92.9	75.2	103	139	136	119	53.2			
most tion	NO	22.1	59.6	73.8	102	50.2	7.3	38.4	98.3	72.1	48.3	22.9	34.9	68.3	81.8	90.3	17.6	4.0	35.8	106	95.2	72.3	31 .9			
		56.4	207	535	126	1488	7062	2067	64.9	271	184	64.5	96.4	238	172	302	3607	8028	2271	147	172	410	110			
Neasured Gas Co	202	92.0	2.57	4.90	8 . 48	8.13	6.13	7.95	8.39	4.90	2.69	1.05	1.68	3.53	5.32	8.30	7.11	5.68	7.47	8.75	6.9	4.89	1.80			
Measu	oo mdd	59.2	228	911	1211	2367	4334	2692	794	615	285	115	210	454	728	1289	4061	4300	3037	1098	1098	1110	298			
Padial	-	-13.59	-10.71	-7.66	-4.94	-2.08	1.01	3.80	89.9	9.56	12.44	14.60	13.73	9.97	8.18	5.62	3.41	1.04	-1.79	-5.29	-7.49	-9.88	-12.8			
	Probe No.	1	1	-	-	1	-	-	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2			

Table 23. Summary of Plume Measurements, J79-15, Run No. 25-1.

Run Date 4/8/74, Power Setting MIN A/B, Axial Station 0 ft

Table 24. Summary of Plume Measurements, J79-15, Run No. 25-2.

Run Date 4/8/74 , Power Setting MAX A/B , Axial Station 0 ft

											0.0					_				_	_		_	_	_	 -	_	 	_
	NO _x 5 (x 10)	1 29	4.51	6.46	69.9	6.28	4.18	4.69	6.50	6.49	5 31	1.11	1.70	5.64	6.65	6.78	5.05	3.64	4.59	6.82	96 9	6.99	1.90						
2-in.2	NO (x 10 5)	0.81	3.20	5.14	5.32	4.52	0.84	1.45	5.04	5.14	3.76	0.20	1.02	4.32	5.51	5.51	2.64	0.22	1.49	5.45	5.82	5.85	1.12						
te, 1b/sec-in	HC (x 10 ⁵)	0.16	0	0	0	2.13	38.5	25.5	0.27	0	0.44	3.78	0.37	0	0	0	10.9	93.4	25.3	0.55	0	0.14	0						
Flow Rate,	(× 10 ⁻³)	0.18	0.76	11.1	2.20	1.16	1.40	1.25	1.09	1.46	0.47	0.23	0.22	1.01	1.38	1.32	1.08	1.53	1.20	1.24	1 88	2.39	0.31						
	Fuel ₃ (x 10 ⁻³)	2.31	9.40	13.18	13.65	12.55	10.45	11.17	13.27	13.53	11.07	2.52	3.39	12.01	14.14	14.13	12.02	11.02	11.48	13.63	14.20	14.27	4.32						
Total	(Meas)																												
Total	(Calc)	1624	2998	3639	3809	3506	2877	3013	3634	3691	3161	1631	2002	3590	3980	3954	3384	2822	3163	3826	39.42	3928	2241						
Static		13.590																				-	•						
Total	Press	15.85	25.85	31.20	30.17	30.43	28.42	30.07	31.51	31.46	29.81	16.16	16.77	28.34	30.78	30.99	29.74	28.81	29.58	30.73	30 83	30.73	17.76						
×	NO.	5.6	4.8	4.9	4.9	5.0	4.0	4.2	4.9	4.8	4.6	4.4	5.0	4.7	4.7	4.8	4.2	3.3	4.0	5.0	4.9	4.9	4.4						
Emission Index	HC NO 1b Fue	3.5	3.4	3.9	3.9	3.6	8.0	1.3	3.8	3.8	3.4	8.0	3.0	3.6	3.9	4.0	2.2	0.2	1.3	4.0	7	4.1	2.6						
missio	HC 5/1000	0.7	0.0	0.0	0.0	1.7	36.8	22.8	0.2	0.0	0.4	15.0	1.1	0.0	0.0	0.0	9.1	84.8	22.0	0.4	9	0.1	0.0						
M	8 8	77.3	80.9	84.3	161.2	92.8	134	112	82.4	108	42.2	8.06	65.5	84.3	97.5	93.1	90.0	138.9	104.9	91.2	132 4	167.7	72.5						
	Fuel/Air Ratio	.0158	.0405	.0541	.0595	.0515	.0405	.0424	.0540	.0557	.0434	.0162	.0220	.0531	.0621	.0615	.0492	.0418	.0454	.0585	.0620	.0624	.0261						
uc	NO _X	55	116	159	171	152	97	106	156	158	119	45	89	147	171	174	124	84	110	173	179	178	20						
mposition	NO	34	83	125	138	110	20	33	122	125	68	80	40	114	142	145	64	9	34	139	149	151	42						
Gas Com		23	2	0	1	167	2943	1900	21	3	30	496	51	0	0	0	878	7026	1963	41	0	7	2						
Measured G	202	3.19	8.35	4967 11.27	10472 11.92	5188 10.62	7.77 2943	8.38 1900	1849 11.26	6545 11.47	9.13	3.20	4.49	4866 11.04	6647 12.94	6273 12.83	4798 10.07	7.58 7026	9.05 1963	12.19	8995 12.66	12.50	5.33						
Meas		1286	3525	4967	10472	5188	5832	5086	1849	6545	1975	1551	1523	4866	6647	6273	4798	6240	5137	5832	8995	11457	2010						
Radial	Position in.	-14.63	-11.60	-8.90	-6.02	-2.99	-0.55	2.69	5.55	8.61	11.48	14.35	16.13	13.19	10.25	7.30	4.34	1.40	-1.60	-4.55	-7.50	-10.45	-13.40						
	Probe No.	1	1	7	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2						

Table 25. Summary of Plume Measurements, J79-15, Run No. 25-3.

Run Date 4/8/74, Power Setting MIL, Axial Station 7.5 ft

				_		_		_	_	_			_	_		_		_	_	_	_		_	 _	_	
	NO _x -5,	0.28	76.0	2.31	4.66	6.67	7.02	66.9	5.73	3.39	1 61	0.62	1.25	1.22	4.15	6.16	7.15	7.11	7.04	5.75	3.97	2.09	1.00			
-in.2	NO 5		0.88	2.08	4.24	5.85	6.24	6.21	5.13	3.02	1.47	0.58	1.14	1.10	3.72	5.46	6.39	6.35	6.29	5.18	3.55	1.91	98.0			
Rate, 1b/sec-in	HC_6, 10_6,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Flow Ra	co 10-4	0.01	0.02	0.05	0.10	0.14	0.16	0.16	0.13	0.08	0.04	0.02	0.03	0.54	0.09	0.13	0.15	0.16	0.16	0.12	80.0	0.04	0.02			
	Fue1 (x 10-3)	0.19	0.71	1.79	3.85	5.47	6.00	6.03	4.98	2.90	1.28	0.48	0.93	1.85	3,35	5.01	5.81	5.88	5.82	4.71	2.96	1.54	0.67			
Total	(Meas)																									
Total	(Calc)	729	875	1081	1360	1561	1633	1612	1478	1243	974	829	912	1084	1290	1469	1568	1585	1577	1444	1244	1032	863			
Static		13.57																								
Total	Press	13.95	15.08	17.76	24.35	29.81	31.36	32.08	28.73	21.11	16.47	14.51	15.58	18.01	22.79	29.17	31.82	31.82	31.66	27.82	21.44	17.08	15.01			
×	NO _X	14.6	13.7	12.9	12.1	12.2	11.7	11.6	11.5	11.7	12.6	13.0	13,4	13.1	12.4	12.3	12.3	12.1	12.1	12.2	13.4	13.6	14.9			
on Inde	NO I	13.5	12.4	11.6	11.0	10.7	10.4	10.3	10.3	10.4	11.5	12.0	12.3	11.8	11.1	10.9	11.0	10.8	10.8	11.0	12.0	12.4	12.9			
Emission Index	HC 1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a	0	0	0	0	0			
	8	4.4	3.3	2.8	2.5	2.6	2.7	2.7	2.7	2.9	3.2	3.7	3.2	2.9	2.7	2.6	2.6	2.7	2.7	2.6	2.7	2.9	3.3			
	Fuel/Air Ratio	.0022	.0043	.0073	.0113	.0143	.0154	.0151	.0131	9600	.0059	.0036	0020	.0073	.0103	.0129	.0144	.0147	.0146	.0126	9600	.0067	.0041			
on	NOX	21.0	37.9	9, 69	85.6	8,801	112.3	108.5	93.4	70.5	47.5	29.9	42,6	60.7	80.1	99.4	10.8	8.01	1.011	95.4	80.9	57.6	39.5			
mposition	NO	19.4	34.3	53.7	6. 77	95.2	99.4	97.0	84.1	62.8	43.4	27.6	39.1	54.8	71.7	88.1	8.0110.8	8.86	88.3	86.5	72.5	52.8	34.3			
	HC	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			Take a
Measured Gas Co	200	0.47	0.92	1.54	2.37	3.01	3.25	3.18	2.74	2.01	1.25	0.76	1.06	1.55	2.16	2.71	3.03	3.09	3.06	2.64	2.03	1.41	0.88			
	OO mdd	10.3	14.9	21.3	30.1	38.8	43.5	42.5	37.7	28.9	20.3	14.2	16.9	22.5	29.0	35.8	39.7	41.1	41.9	34.9	27.4	20.4	14.7			
Radial	Position in.	-17.33	-14.11	-10.88	-7.29	-3.70	-0.50	3.58	7.17	10.76	13.99	17.21	15.40	12.82	9.88	6.93	3.97	1.04	-2.34	-4.92	-7.87	-10.65	-13.40			
	Probe No.		-	-	-	1	-	1	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2			

Table 26. Summary of Plume Measurements, J79-15, Run No. 25-4.

Run Date 4/8/74, Power Setting MIN A/B, Axial Station 7.5 ft

				-		-							The second secon	-	-	The second name of the last of	The second name of the last of	The second second second second	THE REAL PROPERTY AND ADDRESS OF THE PERSON.	The second secon
	Radial	Measu	Measured Gas Co	S Comp	mposition	u.		E E	Emission Index	Inde		Total	Static	Total	Total		Flow Rate,	te, 1b/sec-in	2-1n.2	
Probe No.	Δ.	S mdd	2° ≥	HC	NO Wdd	NO _X	Fuel/Air Ratio	80 AI	HC 16/1000 1	NO 1	Š,	Press	Press	(Calc)	(Meas)	Fue1 (× 10 ⁻³)	00 (x 10-4)	HC (× 10 - 5)	NO (x 10)	NO _x -5,
-	-18.04	111	0.67	48.6	14.9	24.6	.0032	32.3	7.1	7.2	9,11	14.15	13.56	806		0.35	0.11	0.25	0.25	0.42
-	-14.47	203	1.30	87.4	25.1	41.0	.0063	30.6	6.7	6.3	10.3	15.34		666		1.05	0.32	0.70	99.0	1.08
-	-10.88	359	2.49 125	125.4	41.8	69.7	.0121	28.2	5.1	5.5	9.2	18.84		1406		2.88	0.81	1.47	1.58	2.65
-	-7.29	627	4.32	113.9	65.2	96.1	.0208	28.5	2.7	5.1	7.5	25.59		1958		6.09	1.74	1.64	3.11	4.57
1	-3.70	1087	7.06	66.2	91.6	119	.0336	30.2	1.0	4.5	5.8	29.71		2680		9.42	2.84	0.94	4.24	5.46
1	-0.50	1811	7.81	129	83.0	116	.0374	45.2	1.7	3.7	5.1	28.32		2867		99'6	4.37	1.64	3.57	4.93
1	3.58	1593	1.69	109	84.1	117	.0367	40.5	1.5	3.8	5.3	30.02		2836		10.04	4.07	1.51	3.81	5.32
1	7.17	746	5.76	55.4	76.8	105	.0275	25.5	1.0	4.6	6.2	29.61		2351		8.29	2.11	0.83	3.81	5.14
1	10.76	415	3.67	76.4	55.3	83.5	9710.	22.3	2.1	5.1	7.6	22.91		1767		4.87	1.09	1.02	2.48	3.70
-	14.35	250	2.02	8.07	34.0	53.9	8600.	24.3	3.5	5.5	8.8	17.35		1252		2.11	0.51	0.74	1.16	1.86
1	17.92	149	1.12	45.3	20.3	35.1	.0054	26.1	4.0	5.9	10.2	14.93		938		0.82	0.21	0.33	0.48	0.84
2	19.79	112	0.70	26.9	15.6	25.4	.0033	31.3	3.8	7.2	11.8	14.18		816		0.37	0.12	0.14	0.27	0.44
2	16.13	212	1.40	51.9	26.0	44.1	8900	29.6	3.7	6.1	10.3	15.68		1037		1.21	0.36	0.45	0.74	1.25
2	12.46	346	2.52	74.8	42.5	69.1	.0122	27.0	3.0	5.6	9.1	19.10		1415		2.96	08.0	68.0	1.66	2.69
2	8.97	603	4.25	0.17	64.8	94.8	.0205	27.9	1.7	5.1	7.5	25.64		1939		6.04	1.69	1.03	3.08	4.53
2	5.08	1194	6.44	8. 69	84.3	113	.0309	36.3	1.0	4.5	6.0	30.47		2529		9.13	3.31	0.91	4.11	5.48
2	1.40	1802	7.79	138	78.8	113	.0373	45.0	1.9	3.5	5.0	29.27		2863		9.93	4.47	1.89	3.48	4.97
2	-2.34	1433	7.55	87.2	85.2	118	.0360	37.2	1.2	3.9	5.4	30.57		2802		10.01	3.75	1.21	3.93	5.44
63	-6.03	789	5.17	95.2	73.0	106	.0248	30.0	1.9	8.4	7.0	28.39		2194		7.50	2.25	1.43	3.60	5.25
2	-9.72	504	3.32 129	129	46.8	78.8	.0161	29.7	3.9	4.7	7.9	22.06		1665		4.38	1.30	1.71	2.06	3.46
2	-13.40	289	1.80	8.96	29.4	51.8	.0087	31.4	5.4	5.3	9.4	16.72		1179		1.78	0.56	96.0	0.94	1 67
2	-17.07	164	0.95	59.6	17.8	32.5	.0046	33.5	6.2	0.9	11.0	14.64		890		0.64	0.21	0.40	0.38	0.70
												,								

Table 27. Summary of Plume Measurements, J79-15, Run No. 26-1.

5	
Station 7.5	
Axial	
Power Setting MID A/B,	
Setting	
Power	
lun Date 4/9/74	
Date	
Run	

	_	-	_	_	_	_	_	-	_	_	_	-	-	_	-	_	_	-	_	-	_	-	_	-	-	-	 	_	_
	NO _x ₂	0 39	1.06	2.45	4.50	6.16	5.64	5 48	5 25	3.04	1.35	0 53	0.45	1.14	2.43	4.43	5.63	5.31	60.9	5.35	2.70	1.19	0.38						
-in.2	NO 5	0.09	0.17	89.0	2.81	4.92	4.60	4.54	3.68	0.79	0.12	0.07	0.07	0.14	0.56	2.73	4.81	4.52	5.14	4.07	1.21	0.29	60.0						
Flow Rate, 1b/sec-in	HC (× 10- 5	3.19	6.67	7.09	1.97	0.12	0	0	1.79	11.68	16.12	8.25	4.78	9.35	9.53	3.01	0.12	0	0	1.07	5.98	6.97	3.36						
Flow Ra	CO X	92.0	1.92	3.44	4.00	3.58	1.97	2.09	3.94	4.83	3.05	1.36	0.91	2.21	3.78	4.05	2.04	1.86	2.70	3.98	3.79	2.14	0.73						
	Fue1 (x 10 3)	0.74	2.11	4.89	9.37	12.31	11.50	11.65	11.16	09.9	3.07	1.16	0.83	2.32	5.07	9.42	11.73	11.29	11.95	10.70	5.75	2.43	0.72						
Total	(Meas)																												
Total	(Ca1c)	916	1394	1997	2829	3458	3371	3375	3148	2266	1561	1078	96.2	1402	1985	2799	3363	3314	3396	3065	2162	1450	953						
Static	_	13.53																					-						
Total	Press	14.26	15.96	20.08	27.39	30.79	29.30	29.71	30.12	23.01	17.35	14.82	14.38	16.35	20.61	27.82	30.05	29.17	30.36	29.48	21,49	16.51	14.28						
×	NO _X	5.3	5.0	5.0	8.4	5.0	4.9	4.7	4.7	4.6	4.4	9.4	5.4	4.9	8.4	4.7	8.4	4.7	5.1	5.0	4.7	4.9	5.3						
Emission Index	NO 1b Fue	1.2	8.0	1.4	3.0	4.0	4.0	3.9	3.3	1.2	0.4	9.0	8.0	9.0	1.1	2.9	4.1	4.0	4.3	3.8	2.1	1.2	1.2						
missio	1b/1000	43.1	31.6	14.5	2.1	0.1	0	0	1.6	17.7	52.5	1. 17	57.6	40.3	18.8	3.20	0.1	0	0	1.0	65.9 10.4	28.7	46.6						
	8 4	103	91.2	70.4	42.7	29.1	17.1	17.9	35.3	73.2	99.5	117	110	95.4	74.5	43.0	17.4	16.5	22.6	37.2	65.9	88.0 28.7	101						
	Fuel/Air Ratio	.0068	.0129	.0224	.0370	.0495	.0475	.0476	.0432	.0273	.0160	.0085	.0071	.0132	.0223	.0365	.0474	.0463	.0481	.0416	.0252	.0137	.0064						
90	NO _x	22.9	39.9	9.89	107	147	138	132	121	76.2	43.5	24.4	24.2	40.2	0.99	104	135	131	145	126	72.8	41.7	21.7	1					
Composition	MO	5.00	6.50	8.6	9.75	119	113	=	0.38	19.3	4.30	3.20	3.80	5.00	18 15.0	65.0	115	110	122	8.36	32.1	9.90	5.00	1	1				
Gas Comp	нс	809	835	657	155 67.6	8.9	0	0	133	970	1711	1246	853	1088	848	235 6	9.50	0,50	0	. 1	527 3	804	626	1	1				
ured G	202	1.29	2.50	4.50	7.74	10.6	2.01	10.2	9.13	5.48	3.02	1.55	1.33	2.52	4.45	7.62	10.2	9.93	10.3	8.76 80.7	5.09	2.67	1.23	1	1				
on [CO bbm	734	1238	6991	1694	1564	879	_	1647	2123	675	1044	824	1322	1759	1681	895 1	829	1178 1	1666	1756	1270	689	1	1				
Radial	Position in.	-18.76	-14.83	-11.41	-7.65	-4.23	-0.50	3.94	7.35	10.93	15.06	18.63	21.24	17.59 1	13.56	9.51 1	5.45	1.40	1 11.2-	-6.77	-10.82		-18.90	1					
	Probe No.	-	-	7	+	-	1	+	-	-	-	-	2	2	63	2	2	2	2	2	2	2	2	1	1				

Table 28. Summary of Plume Measurements, J79-15, Run No. 26-2.

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7.5
Station
Axial
MAX A/B
Setting M
Power S
4/9/74
Date
Run

	_	+	_	_	-,	_	_	7	_			_			-	1	_	7	-		_	-	1	_	1			_	 _
	NO _x 5	(x 10)	0.64	1 50	2.74	5.10	6.18	5.40	5.52	5.37	3.15	1.40	0.52	0.43	1.14	2.48	5.05	5.74	5.16	5.88	5.57	2 49	0.85	0.29					
.in. 2	NO 5		0.47	1.12	2.05	4.04	4.92	4.38	4.47	4.30	2.33	0.97	0.36	0.27	0.83	1.88	4.08	4.88	4.26	4.90	4.52	1.88	99.0	0.20					
e, 1b/sec-in	HC -6,	7 OI ×	0	0	0	0	0	0	0	0	0	0	0	60.0	0	0	0	0	0	0	0	0	0	0					
Flow Rate	60	(OI X	0.37	69.0	1.37	4.10	7.58	2.52	2.76	5.44	1.94	0.94	0.38	0.37	92.0	1.34	3.68	3.41	2.12	3.94	5.27	1.68	0.67	0.24					
	Fuel	_	1.21	2.94	5.83	10.62	12.61	11.24	11.75	11.94	7.50	3.34	1.11	0.85	2.37	5.52	10.74	12.21	11.21	12.25	11.60	80.9	2.07	0.58					
Total	(Meas)	, H																											
Total	(Calc)	a.	1302	1806	2418	3248	3639	3411	3453	3433	2755	1904	1248	1123	1656	2381	3281	3502.	3331	3504	3404	2531	1602	1001					
Statio	Press	psia	13.54	-																				-					
Total	Press	psia	14.57	16.52	20.39	27.55	29.71	28.11	29.25	29.76	22.60	16.99	14.51	14.28	15.84	19.83	27.67	30.10	28.75	30.16	29.01	20.35	15.42	14.02					
	NOX		5.3	5.1	4.7	8.4	6.4	4.8	4.7	4.5	4.2	4.2	4.7	5.0	8.8	4.5	4.7	4.7	4.6	8.4	8.4	4.1	4.1	5.0					
Index	ON		_	3.8	3.5	3.8	3.9	3.9	3.8	3.6	3.1	2.9	3.2	3.2	3.5	3.4	3.8	4.0	3.8	4.0	3.9	3.1	3.2	3.4					
Emission Index	HC	<u>-</u> -	+		0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0					
Emis	8	1b/10		23.6	23.5	38.6	60.1	22.4	23.5	45.6	25.8	28.2	34.4	43.3	32.0	24.2	34.3	27.9	18.9	32.2	45.4	27.6	32.2	41.8					
	Fuel/Air	Ratio	.0109	.0186	.0291	.0453	.0539	.0484	.0493	.0492	.0353	.0202	1010.	.0083	.0163	.0284	.0459	.0504	.0467	.0505	.0486	.0312	.0154	.0067					
	×	E.	36.3	58.5	84.1	130	156	140	138	134	6.06	52.1	30.0	26.1	48.3	0.64	129	141	128	145	138	0.77	39.6	21.1					
sition	NO N	+		43.8	62.1	102	126	113	112	107	65.4	35.9	20.4	16.6	35.3	6.69	103	119	107	122	113	58.6	30.2	14.3		-			
Compo	Ž.	+	+	0	9 0	0	0	0	0	0	9 0	0 3	0 2	1.2 1	0 3	0 5	0	0	0	0	0	0 5	0 3	0 1			-		
d Gas	NC HC			3.88	6.10	9.58			-	-		-	-	11	_	_	_	_	-			6.55	3.19	1.38					
Measured Gas Composition	200 00	+	-+	463 3	727 6.	1889	3528 11.4	1176 10.4	1258 10.6	2433 10.4	975 7.45	604 4.21	365 2.08	379 1.71	549 3.37	732 5.96	1703 9.73	1528 10.8	954 10.0	1769 10.8	2392 10.3	916 6.	523 3.	295 1.		-			
Radial	Ļ	†	+	-15.35	-11.77	-8.18	-4.23 35	-0.55 11	3.76	7.70 24	11.29	14.87	18.44	23.06	18.69	14.29	9.88	5.45 15	1.04	-3.81	-7.87 23	-12.30 9	-16.70	-20.72					
	-		+	-	-	-	1	-	-	1	1	1	1	2	5	2	2	2	2	2	2	2	2	2					

Table 29. Summary of Plume Measurements, J79-15, Run No. 27-1.

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	NO _x -5 (× 10)	90.0	0.27	0.79	1.90	3.71	4.99	4.83	2.45	1.00	0.32	0	0.17	0.43	1.12	2.46	4.41	5.39	3.68	1.77	99.0	0.19	0 03				
-in.2	(× 10 5)	90.0	0.26	0.73	1.78	3.38	4.56	4.36	2.26	0.93	0.29	0	0.15	0.39	1.04	2.21	3.93	4.86	3.29	1.58	0.56	0.17	0.03				
Flow Rate, 1b/sec-in	HC_6 (× 10_6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Flow Ra	(x 10-4)	0	0.01	0.02	0.04	0.08	0.11	0.11	0.05	0.02	0.01	0	0.01	0.01	0.03	0.05	0.10	0.12	0.08	0.04	0.02	0.01	0				
	Fue13	0.03	0.15	0.52	1.32	2.75	3.90	3.79	1.74	0.68	0.19	0	0.08	0.25	0.74	1.71	3.22	4.02	2.63	1.19	0.38	60.0	0.01				
Total	(Meas)																										
Total	(Calc)	562	62	682	926	1133	1256	1242	970	832	671	920	969	703	836	975	1171	1251	1110	904	744	809	532				
Static		13.59	-																								
Total	Press	13.69	14.05	14.87	16.99	21.78	26.52	26.10	18.58	15.23	14.05	13.59	13.81	14.18	15.42	18.33	24.03	27.51	21.54	16.67	14.59	13.81	13.66				
×	NO _X	19.3	17.8	15.2	14.4	13.5	12.8	12.7	14.1	14.7	17.1	25.5	20.8	17.2	15.2	14.4	13.7	13.4	14.0	14.9	17.3	8.02	31.0				
Inde	NO Ib Fue	20.1	17.6	14.1	13.5	12.3	11.7	11.5	13.0	13.7	15.0	23.2	18.4	15.7	14.0	12.9	12.2	12.1	12.5	13.3	14.8	19.1	29.3				
Emission Index	1b/1000 1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0				
Æ	00 A1	7.0	5.0	3.5	3.1	6.2	8.2	6.2	3.1	3.6	4.8	6.8	6.2	4.5	3.6	3.2	3.0	2.9	3.0	3.3	4.0	6.2	12.8				
	Fuel/Air Ratio	9000	.0014	.0032	.0055	.0083	1010.	6600	.0062	6200.	8100.	.0005	0100.	.0021	.0040	.0062	8800.	0010	0800	.0052	.0026	.0012	.0003				
-	NO _X	9.5	8.9	81.8	9.09	6.0	1.1	0.6	55.5	9.98	1.1	.2 10.1	5.4	4.5	6.8	17.1	9.9	14.3	0.4	9.2	29.5	17.2	6.7				
Composition	NO mdd	8.6	16.6 16.8	29.4 31.8	47.3 50.6	64.6 70.9	73.7 81.1	71.0 79.0	51.0	34.3 36.6	18.5 21.1	9.2	13.6 15.4	22.3 24.5	35.7 38.9	51.0 57.1	67.8 76.6	76.1 84.3	62.9 70.4	43.8 49.2	25.3 2	15.7	7.4				
	HC N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
ed Ga	202	0.16	0.31	69.0	1.16	1.75	2.11	2.07	1.30	0.82	0.40	0.13	0.24	0.47	0.84	1.31	1.86	2.10	1.68	1.09	0.56	0.27	80.0				
Medsured Gas	o wdd		7.7	12.2	18.0	25.1	29.62	29.9	20.4	14.7	9.7	5.8	7.6	10.7	15.2	21.2	27.6	31.0 2	25.1 1	17.8	11.4	8.4	5.3				
Radial		-22.80	-23.17	-17.49	-11.77	-6.02	-0.55	3.76	11.29	17.02	22.70	28.33	29.92	24.51	18.69	12.82	6.93	1.04	-4.92		-16.70	-22.54	-28.32				
	Probe No.	1	-	7	-	1	1	-	-	-	1	1	2	2	2	2	2	23	2	1	2	2	2				

Table 30. Summary of Plume Measurements, J79-15, Run No. 27-2.

Rus Date 4/10/74 , Power Setting MIN A/B , Axial Station 15 ft

																_		_			_		_	_	
	NO _x 5	80 0	0.26	99.0	1.73	3.32	4.28	3 83	2.14	0.93	0.37	0.02	0.12	0.34	96.0	2.17	3.78	4.78	3.59	2.11	06.0	0.30	0.04		
-1n.2	NO 5	0.04	0.15	0.41	1.00	2.18	3.20	2.72	1.35	0.53	0.22	0.01	0.07	0.20	0.55	1.34	2.66	3.57	2.54	1.22	0.51	0.16	0.02		
te, 1b/sec-in	HC (× 10 - 6)	0.3	1.2	3.5	7.5	8.2	4.5	5.0	4.6	2.9	1.1	0	0.3	1.2	3.1	5.9	5.3	4.3	7.5	6.7	3.8	1.1	0.1		
Flow Rate,	00 ×	0.03	60.0	0.26	0.65	1.42	1.89	1.69	0.73	0.32	0.11	0	0.04	0.11	0.32	0.78	1.49	2.05	1.57	0.76	0.32	0.10	0.01		
	Fuel (x 10-3)	0.05	0.22	0.72	2.04	4.55	6.39	5.55	2.55	1.02	0.34	0.01	80.0	0.31	96.0	2.58	5.32	7.13	4.99	2.40	0.91	0.24	0.05		
Total	(Meas)																								
Total		595	733	006	1217	1705	2035	1837	1354	965	97.2	969	632	785	945	1323	1802	2073	1735	1285	932	731	576		
Statio		.58																							
5		13.																							
Total	Press	13.69	13.95	14.72	17.14	21.98	25.49	24.51	17.86	15.29	14.20	13.59	13.71	14.07	15.27	18.22	23.98	28.13	23.41	17.91	15.11	14.02	13.60		
×	₩.	15.1	11.6	9.5	8.5	7.3	6.7	6.9	8.4	9.1	11.0	15.5	14.6	11.0	8.6	8.4	7.1	6.7	7.2	8.8	6.6	12.3	17.5		
Inde	NO Pue	8.7	6.7	5.7	4.9	8.4	5.0	4.9	5.3	5.2	9.9	6.3	9.8	6.4	5.6	5.2	5.0	5.0	5.1	5.1	5.6	6.5	8.6		
Emission Index	1b/1000 1b Fuel	8.9	5.6	6.4	3.7	1.8	0.7	6.0	1.8	8.2	3.3	2.2	4.3	3.8	3.2	2,3	1.0	9.0	1.5	8.2	4.2	4.7	6.9		
Emi	00 1/91	49.5	39.1	36.5	32.1	31.1	29.5	30.5	28.7	31.3	33.5	41.6	43.8	35.9	32.8	30.1	28.1	28.4	31 .4	31.5	34.9	39.7	57.0		
	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	0100	0025	. 0051	9600	. 0110	.0223	1610	9110	. 0061	0030	0100	0014 4	0032	8500	0111	0185 2	0230 2	.0174	.0106	9500	0024	8000		
	Fuel/Air Ratio	0.	0.	0.	ō.	0.	.0.	0.	0.	ō.	0.	0.	0.	0.	0.	0	0	.0	0.	0.	0.	0.	0.		
uo	NO _X	10.9	18.9	31.2	51.5	76.8	91.7	80.8	6.09	35.4	21.7	11.2	14.3	22.6	36.4	58.3	81.3	94.1	4.77	58.3	35.6	19.8	10.2		
nposition	MO	6.3	10.8	18.7	29.8	50.6	68.2	57.7	38.6	20.4	13.1	6.7	8.4	13.1	8.02	36.1	57.5	71.4	54.9	33.9	20.0	10.4	5.7		
	HC	16.2								36.1	21.4	5.2	3.8				38.1		52.6				3.1		
ed G	202	0.23 16.2	0.52 30.0	1.06 52.4	1.98 72.6	3.51 61.1	4.65 33.0	3.96 35.9	2.39 43.0	1.27 3	0.64 2	0.23	0.31 13.8	0.66 25.4	1.20 39.0	2.30 53.1	3.84 3	4.79 27.1	3.61 5	2.18 60.0	1.16 48.8	0.52 25.0	0.18 13.1		
Measured Gas Cor	bbm co	-	105	198	324	556	697	614	349 2	202	109	49.5	70.1 0	122 0	202	352 2	549 3	692 4	578 3	350 2	208	106	54.3		
					+	-			-	+	-		1	-	-	-	-	-	-	-	+	-	1		
Radial	Д.	-30.54	-24.58	-18.56	-12.48	-6.38	-0.55	5.91	12.01	18.09	24.12	30.08	32.06	25.96	19.79	13.56	7.30	1.04	-5.29	-11.56	-17.80	-23.99	-30.12		
	robe No.	-	-	-	4	-	4	-	-	-	-	-	21	2	2	23	2	2	2	2	2	2	2		

Table 31. Summary of Plume Measurements, J79-15, Run No. 27-3.

Run Date 4/10/74, Power Setting MID A/B, Axial Station 15 ft

		-			3 12	1	4000	-	-		1					-					_	_		_	_	_	
	NO _x 5	01 00	91 0	0.55	1.41	3.25	4.20	3.52	1.73	0.74	0.22	0.05	0.07	0.29	92.0	1.85	3.50	4.74	3.66	1.86	0.82	0.26	0.04				
-1n.2	NO 5	2 8	0.05	0.19	0.66	2.37	3.29	2.24	69.0	0.15	0.04	0.01	0.05	0.07	0.20	0.74	2.34	3.63	2.49	68.0	0.26	0.07	0.01				
te, 1b/sec-in	HC 6	91.	4.9	0.6	12.4	5.4	1.8	14.4	34.3	8. 62	14.8	3.7	4.6	14.6	25.0	32.2	12.4	2.0	6.2	17.8	15.3	6.3	1.1				
Flow Rate,	00 %	0 02	0 24	99.0	1.31	1.86	1.57	2.62	2.32	1.12	0.36	0.89	0.12	0.48	1.10	2.06	2.47	1.78	2.15	1.88	1.03	0.30	0.05				
	Fuel3	8	0.36	1.13	2.88	6.77	9.13	8.00	4.03	1.52	0.40	60.0	0.13	0.58	1.55	3.70	7,30	10.08	7.79	3.88	1.63	0.45	90.0				
Total	(Meas)	-																									
Total	(Calc)	308	877	1221	1728	2464	3041	2668	1926	1287	877	712	765	972	1322	1870	2480	3015	2627	1890	1365	919	702				
Static	Press	13.56																									
Total	Press	13 64	13.90	14.62	16.68	22.70	25.18	24.71	18.43	15.18	13.95	13.64	13.66	14.07	15.16	17.91	24.14	28.29	24.45	18.33	15.21	13.97	13.60				
×	S.	1 2	5.1	6.4	4.9	4.8	4.6	4.4	4.3	4.9	5.6	5,9	5.7	5.0	4.9	5.0	8.4	4.7	4.7	8.8	5.0	5.8	6.4				
n Inde	ON S	Ib rue	1		2.3	3.5	3.6	2.8	1.7	1.0	1.1	1.3	1.5	1.2	1.3	2.0	3.2	3.6	3.2	2.3	1.6	1.6	1.8				
Emission Index	HC.	4 17 a		8.0	4.3	0.8	0.2	1.8	8.5	19.6	36.9	40.6	35.0	25.2	16.1	8.7	1.7	0.2	0.8	4.6	9.4	13.9	18.2				
	8	75. 4	0.99	58.6	45.6	27.5	17.2	32.7	57.5	74.0	89.4	6,86	94.4	83.2	71.0	55.8	33.9	17.7	27.6	48.4	63.3	66.0	80.5				
	Fuel/Air			7600.	.0174	.0298	.0406	.0336	.0208	.0108	.0048	,0023	.0030	.0064	.0113	6610.	.0301	.0401	.0328	.0201	.0119	.0054	.0021				
lon	NOX			Y 45 mg	53.2	88.0	112	3	54.9	33.4	17.4	9.10	11.0	20.4	34.5	61.8	88.0	113	93.7	59.6	37.5	20.2	9.20				
mposition	NO	_	+	-	25.1	63.9	87.2	57.5	21.5	7.10	3.30	1.90	2.90	4.70	9.40	24.0	58.4	87.8	64.3	28.0	11.6	5.40	2.60				
Gas Col	HC	85.8	_		151	45.3	13,3		358	437	376	203	223	335	374	349	101	18.7	54.3	189	230	159	85.1				
Measured Gas Col	200		-	1.96	3.56	6.24	8.65		4.22	2.15	0.94	0.46	0.59	1.26	2.26	4.04	6,29	8,53	68.9	4.11	2.39	1.10	0.44				
Mea	8	2 2	327	597	835	872	750	1177	1263	843	460	249	304	561	846	1111	1090	763	896	1026	791	381	189				
Radial	Position	-34.01	-27.40	-20.69	-13.91	-7.10	-0.55	6,63	13.63	20.57	26.93	33.56	35.61	28.48	21.97	15.03	8.03	1.04	-6.03	-13.03	-19.99	-26.89	-33.68				
	Probe	-	-	1	1	1	-	1	1	-	1	-	2	2	2	62	2	2	2	2	2	2	2				

Table 32. Summary of Plume Measurements, J79-15, Run No. 27-4.

Run Date 4/10/74 , Power Setting MAX A/B , Axial Station 15 ft

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	NO _x 5 (x 10)	90.0	0.22	0.64	1.57	3.39	4.51	3.56	1.63	09.0	0.01	0.03	0.10	0.33	0.92	2.15	3.92	5.12	3.89	1.81	0.70	0.23	0				
- in. 2	NO (× 10 5	0.04	0.19	0.53	1.23	2.60	3.59	2.63	1.17	0.42	60.0	0.02	0.07	0.24	0.70	1.52	3.03	4.03	2.94	1.29	0.56	0.18	0				
Flow Rate, 1b/sec-in.	HC (x 10 6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Flow Rat	co (x 10-4)	0.02	60.0	0.22	0.40	16.0	1.19	0.73	0.43	0.21	0.05	0	0.05	0.14	0.30	0.51	0.91	1.25	96.0	0.47	0.24	60.0	0				
	Fuel3 (x 10)	0.12	0.49	1.42	3.42	\$8.4	10.25	8.47	3.79	1.36	0.25	0.04	0.18	0.65	1.84	4.47	8.92	10.90	8.64	4.03	1.59	0.48	0				
Total	(Meas)																										
Total	(Calc)	783	1025	1439	2026	2896	3354	2955	2075	1414	915	648	805	1078	1544	2208	2992	3311	2968	2142	1485	1040	759				
Static	Press	13.56																					-				
Total	Press	13.64	13.90	14.72	16.83	22.86	26.00	24.04	17.40	14.67	13.69	13.59	13.71	14.07	15.21	18.33	25.02	28.18	24.40	17.65	14.90	13.86	13.56				
×	NO _X	5.4	4.4	4.5	4.6	4.3	4.4	2.2	4.3	4.4	5.2	7.3	5.7	5.1	5.0	4.8	4.4	4.7	4.5	4.5	4.4	8.4	9.9				
Emission Index	NO 1b Fue	3.4	3.8	3.7	3.6	3.3	3.5	3.1	3.1	3.1	3.4	3.7	3.7	3.7	3.8	3.4	3.4	3.7	3.4	3.2	3.5	3.7	4.3				
Emissi	HC NO 1b/1000 1b Fue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	8	18.6	17.5	15.4	11.8	11.5	11.6	8.6	11.3	15.3	21.2	22.9	27.6	21.5	16.4	11.4	10.2	11.5	11.4	11.6	14.9	18.3	20.8				
	Fuel/Air Ratio	.0030	8900	.0127	.0220	.0377	6970'	.0388	.0228	.0123	.0052	.0015	.0034	.0075	.0143	.0251	.0395	.0460	.0391	.0240	.0134	0000.	.0027				
ion	NO _X	10.6	19.0	36.0	61.8	0.76	125	8.86	0.09	33.7	17.4	7.5	12.4	24.0	44.1	73.8	106	129	107	62.9	37.0	21.3	11.7				
mposit	NO	8.9	16.5	29.4	48.1	75.5	99.5	73.5	43.5	24.2	11.5	3.8	8.0	17.3	33.4	52.4	9.08	103	80.2	47.7	29.5	16.2	7.5				
Gas Cor	HC	0 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Measured Gas Composition	°25	0.65	1.42	2.65	4.62	8.04	10.1	8.29	4.80	2.57	1.10	0.33	0.71	1.56	2.98	5.29	8.45	9.88	8.34	5.04	2.79	1.46	0.58				
Mea	oo udd	9.09	125	206	376	465	587	359	272	198	118	38.7	99.5	170	247	304	435	573	480	294	210	136	60.5				
Radial	Position in.	-35.74	-28.80	-21.75	-14.63	-7.46	-0.55	66.9	14.16	21.28	28.33	35.63	37.72	30,28	23.06	15.76	8.40	1.04	-6.40	-13.77	-20.72	-28.32	-35.46				
	Probe No.	1	-	1	-	-	-	7	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2				

Table 33. Summary of Plume Measurements, J79-15, Run No. 23-2.

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	NO _X S	0.06	0.15	0.31	0.71	1.22	1.43	10.1	0.46	0.30	0.05	0	0	0.03	0.24	69.0	1.29	1.86	1.52	1.03	0.39	0.08	0.05		
2 nr. 2	NO (x 10 5)	0.05	0.15	0.29	0.65	1.07	1.29	96.0	0.44	0.27	0.05	0	0	0.05	0.21	0.65	1.18	1.73	1.38	68.0	0.34	60.0	0.05		
s, 1b/sec-1n.	HC (× 10-6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Flow Rate,	(2-01 ×	0.05	90.0	0.10	0.19	0.31	0.36	0.27	0.15	60.0	0.02	0	0	0.02	0.07	0.18	0.32	0.45	0.37	0.25	0.11	0.03	0.01		
	Fuel3	0.02	0.07	0.16	0.38	89.0	0.83	0.59	0.25	0.14	0.02	0	0	10.0	0.10	0.34	0.70	1.06	98.0	0.54	0.18	0.03	0.01		
Total	(Meas)	909	647	902	764	816	841	798	728	684	615	260	569	625	685	773	852	914	878	608	402	641	969		
Total	(Calc)	543	580	635	969	754	778	749	651	209	547	518	518	531	297	11.9	762	908	787	742	643	551	537		
Static	Press	13.58	13.56	13.48	13.38	13.32	13.32	13.30	13.35	13.45	13.56	13.61	13.60	13.50	13.47	13.31	13.26	13.21	13.26	13.29	13.42	13.47	13.52		
Total	Press	13.66	13.83	14.02	14.75	15.78	16.21	15.32	14.34	14.04	13.69	13.60	13.60	13.66	13.85	14.74	15.79	16.95	16.21	15.16	14.00	13.64	13.60		
	NOX	30.8	21.7	19.3	18.6	17.9	17.2	17.2	18.5	21.7	25.2	28.9	42.0	30.9	24.4	20.2	18.4	17.5	17.7	0.61	21.5	27.2	15.5		
Index	NO 1b Fuel	26.8	6.02	18.1	17.0	15.8	15.6	16.2	17.7	19.5	8.92	38.1	39.0	47.6	21.4	19.0	16.9	16.3	16.0	16.4	18.9	31.2	23.9		
Emission Index	HC 1000	0	0	0	0	0	0	0 1	0	0	0 2	0	0	0 4	0	0	0 1	0 1	0	0 1	0	0	0 2		
Emi	CO HC	12.0	6.7	0.9	5.0	4.5	4.3	4.6	0.9	6.5	11.0	27.3	25.9	16.4	7.10	5.20	4.50	4.20	4.30	4.60	6.00	11.0	14.6		
	Ratio Ratio	.0004	8000	.0014	.0021	.0027	.0030	.0026	9100.	1100.	.0004	.0000	.0000	.0002	0100	8100.	.0028	.0034	.0032	.0025	.0015	.0005	.0003		
	×E	6.6	13.2	7	9.	7.	0.	7.	20.2	17.5	8.8	3.1	4.7	7.1	17.8	24.8	33.7	39.0	5.5	31.9	22.5	10.4	4.4		
mposition	N ON BOOK	9	12.7 13	17.9 19.1	23.3 25.6	28.0 31.7	30.9 34.0	28.0 29.7	19.4 20	15.7 17	9.3	4.1 3	4.4 4	10.9	15.6 17	23.3 24	30.9 33	36 4 39	33.0 36	27.4 31	19.8 22	11.9 10	6.80		
		\vdash	0 1	0	0 2	0 2	0 3	0 2	0 1	0 1	0	0	0	0 1	0 1	0 2	0 3	0 3	0 3	0 2	0	0 1	9 0		
S G	P2 HC	0.10	0.20	0.32	0.45	0.58	0.65	0.57	0.36	0.26	0.11	0.03	0.04	0.07	0.24	0.40	09.0	0.73	0.68	0.55	0.34	0.13	60.0		
Measured Gas Co	00 =	-	7.9 0.	9.8 0.	11.3 0.	13.1 0.	13.9 0.	13.2 0.	10.8 0.	8.6 0.	6.3 0.	4.8 0.	4.8 0.	6.2 0.	8.5 0.	10.4 0.	13.8 0.	15.6 0.	14.7 0.	12.7 0.	10.3 0.	6.9	6.8 0.	-	
-		Н	-	-	_		1			-	-		-	-	-						-	-	-		
Radial	Δ.	-49.16	-39.24	-29.49	-20.04	-11.81	8.96	15.33	24.39	34.03	43.83	53.65	-56.69	-46.17	-35.70	-25.25	-15.17	- 2.46	7.44	17.85	28.33	38.76	49.12		
	Probe No.	7	1	1	-	1	-	1	1	1	1	1	2	2	2	2	2	2	23	2	2	8	2		

Table 34. Summary of Plume Measurements, J79-15, Run No. 23-3.

Run Date 4/3/74 , Power Setting MIN A/B, Axial Station 30 ft

Table 35. Summary of Plume Measurements, J79-15, Run No. 22.
Run Date 4/1/74 Power Setting MID A/B, Axial Station 30 ft

	Radial	Wess	Weasured Gas	S Com	Composition	go.		Em	Emission Index	Index		Total	2110	Total	Total		Flow Re	Flow Rate, 1b/sec-in.	2-1n.2	
Probe	Position		8	ЯС	NO	NOx	Puel/Air	8	HC	NO	No.	Press	Press	(Calc)	(Meas)	Fue 13		9-2K		NO _x -5
No.	in.	mdd		bbw	mdd	mdd	Ratio	16/	1b/1000 1b Fue	b Fuel	H	psia	psia	"R	°R	(x 10)	(x 10	(× 10)	(x 10)	(x 10)
-	-75.67	53.4	0.12	1.0	3.0	3.3	.0005	85.9	8.0	1.9	8.7	13.61	13.66		602	0	0	0	0	0
1	-60.28	97.3	0.36	12.6	3.4	6.3	7100.	49.3	3.4	3.0	9.6	13.66	13.64		680	0.04	0.02	0.1	0.01	0.05
1	-44.70	191	0.76	27.3	4.8	11.3	9800	48.9	3.6	2.1	4.8	13.79	13.56		807	0.25	0.12	6.0	0.05	0.12
1	-29,18	322	1.50	49.0	8.0	23.2	6200.	41.9	3.3	1.7	5.1	14.31	13.42		1046	0.88	0.37	2.9	0.15	0.45
1	-14.70	453	2.44	11.11	14.4	34.1	6110.	36.3	2.9	2.0	4.6	15.75	13.30		1337	2.28	0.83	9.9	0.46	1.05
1	11.27	492	2,85	73.1	19.4	40.3	.0138	33.8	2.6	2.3	4.7	17.33	13.24		1457	3.55	1.20	9.2	0.82	1.67
1	23.16	432	2.13	69.5	11.5	30.4	.0104	39.6	3.3	1.8	4.7	15.40	13.30		1267	1.87	0.74	6.2	0.34	0.88
1	38.64	287	1.04	81.8	5.6	16.4	.0051	53.2	7.7	1.7	5.1	14.10	13.48		923	0.54	0.29	4.2	60.0	0.28
1	54.31	129	0.34	48.2	2.4	6.2	9100.	72.3	13.6	2.3	5.7	13.69	13.58		200	80.0	90.0	1.1	0.02	0.05
1	69.72	12.4	0.05	-4.5	1.2	1.9	0		0	15.5	7	13.61	13.69		558	0	0	0	0	0
1	85.07	2.4	-0.05	0.6-	0.7	0.9	0	-	0	884	1	13.64	13.69		531	0	0	0	0	0
2	-84.61	7.9	10.0-19.1	-7.2	0.7	6.0	0	-	0	314	•	13.66	13,68		543	0	0	0	0	0
2	-65.95	28.2	0.04	0	1.4	1.9	90000	1	0.2	11.2		13 64	13.63		589	0	0	0	0	0
2	-53.79	85.8	0.27	18.0	3.3	8.0	.0012	60.4	6.4	3.9	9.4	13.69	13.58		722	0.06	0.04	0.4	0.05	90.0
2	-35.51	269	1.15	43.8	7.7	18.8	9500.	45.7	3.8	2.2	5.3	14.08	13.39		985	0.61	0.28	2.3	0.13	0.32
2	-22.20	421	2.25	54.7	15.1	32.8	6010.	36.6	2.4	2.2	8.8	15.45	13.21		1322	2.00	0.73	4.8	0.44	96.0
2	- 4.26	549	3,18	82.2	22.6	46.5	.0154	33.8	2.6	2.4	4.9	18.16	13.13		1684	4.24	1.43	11.0	1.02	2.08
	NO	NOTES:	Radial	posit	a noi	djusted	Radial position adjusted for symmetry.	try.												
			Prope	MS ZH	seb 18	1ncom	olete.													

Summary of Plume Measurements, J79-15, Run No. 23-1. Run Date 4/3/74 Perer Setting MAX A/B, Axial Station 30 ft Table 36.

			_				_	_		_		_		_	_						_			_	_
	NO _{x 5}	2 ×	0 03	0.15	0.41	1 06	1.86	0.93	0.16	0	0	0	0	a	90.0	0.35	1.01	2.28	1.72	09.0	0.16	60.0	0		
.in. 2	NO S	01 43	0 00	0.13	0.32	0.92	1.54	97.0	0.12	0	0	0	0	O	0.04	0.31	0.79	1.92	1.44	0.48	0.12	0.05	0		
Flow Rate, 1b/sec-in	HC_6,	01 (0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Flow Ra	°5-00	2	0.07	0.35	0.79	1.73	2.59	1.41	0.28	0	0	0	0	0	0.13	0.63	1.45	2.92	2.70	1.32	0.41	0.27	0		
	Fue13	2 0	0.04	0.28	0.77	2.08		1.72	0.27	0	0	0	0	0	0.08	0.59	1.71	4.00	3.07	1.03	0.25	0.14	0		
Temp	(Meas)	808	108	894	1113	1379	1523	1326	968	630	538	516	554	604	764	1120	1489	1854	1648	1211	198	749	602		
Total	(Calc)																								
Static	Press	13 64	1	13.48	13.40	13.22	13.17	13.22	13.48	13.58	13.61	13.66	13.66	13.58	13.52	13.39	13.18	13.05	13.05	13.29	13.45	13.47	13.60		
Total	Press	13 55	13.58	13.72	14.15	15.32	17	15.13	13.72	13.53	13.55	13.55	13.58	13.56	13.64	14.14	15.19	17.84	16.71	14.50	13.74	13.64	13.58		
×	NO	0 7		5.3	5.3	5.1	5.3	5.4	6.0	8.6	7.1	6.1	10.4	8.5	8.1	5.9	5.9	5.7	5.6	5.8	6.3	6.4	10.9		
puI u	ON S	5 2	5.1	4.6	4.2	4.4	4.4	4.4	4.5	5.7	5.3	-	8.2	7.5	5.3	5.2	4.6	4.8	4.7	4.7	4.6	3.8	6.7		
Emission Index	HC.			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
ā	8	22 2	16.5	12.6	10.3	8.3	7.4	8.2	10.3	16.6	_	_	'	26.9	15.7	10.7	8.5	7.3	8.8	12.8	16.2	19.6	40.9		
	Fuel/Air	0000	7100.	.0043	.0072	.0120	.0145	.0103	.0041	9000	-	1	0000	.0003	9100.	.0055	9010.	.0157	.0137	7200.	.0033	.0024	.0003		
-	NOX		7.4	14.5	24.0	38.7	47.9	35.1	15.7	3.9	0.5	0.1	1.0	2.1	æ.	20.8	39.0	55.9	48.0	28.2	13.6	10.2	2.8		
osition	ON	20	5.9	12.5	19.2	33.0	40.0	28.5	11.9	2.6	0.4	-	8.0	1.8	5.8	18.2	30.3	46.9	40.0	22.9	6.6	6.1	1.7		
s Comp	HC	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Measured Gas Compo	200	N	0.38	06.0	1.50	2.52	3.03	2.16	98.0	0.15	0.02	0.01	0.03	0,08	0.35	1.16	2.22	3.30	2.87	1.60	0.71	0.52	80.0		
Measu	00 00	1 00		57.0	0.87	105	113	89.2	44.8	12.3	5.8	3.0	6.9	10.8	28.0	62.0	95.1	121	126	103	57.7	51.3	17.0		
Radial	Position	1 56	_	-45.62	-28.80	-13.10	12.28	26.64	43.42	60.19	77.15	93.35	-88.93	-72.48	-55.71	-38.65	-21.84	-5.00	14.73	31.44	48.29	64.92	81.19		
	Probe No.	-	1	-	-	-	-	-	-	7	-	1	2	2	2	2	2	2	2	2	2	2	2		

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Table 37. Summary of Plume Measurements, J79-15, Run No. 28-1.

Run Date 4/15/74, Power Setting MIL., Axial Station 60 ft

_	_	-	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	-
	NO.	0.03	0.06	0.11	0.19	0.27	0.28	0.24	0.18	0.10	0.05	0	0.04	0.07	0.13	0.20	0.27	0.34	0.26	0.18	0.09	0.03	0.02			
- in. 2	NO 5	0.02	90.0	0.11	0.18	0.26	0.26	0.22	0.15	0.10	0.04	0	0.05	0.07	0.13	0.18	0.26	0.32	0.25	9.15	0.09	0.03	0.02			
Flow Rate, 1b/sec-in	HC (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Flow Ra	00 2	0.01	0.03	0.05	0.07	0.10	0.10	80.0	0.07	0.05	0.02	0	0.02	0.04	90.0	90.0	0.10	0.12	0.10	0.07	0.04	0.02	0.01			
	Fue1	0.05	0.05	60.0	0.16	0.22	0.22	0.19	0.13	0.08	0.03	0	0.03	0.05	60.0	0.14	0.20	0.25	0.19	0.12	90.0	0.02	0.01			
Total	(Meas)	565	582	909	626	643	647	639	623	604	584	562	541	539	539	909	650	661	650	628	909	576	554			
Total	(Calc)																									
Static		13.64	13.58	13.61	13.56	13.58	13.58	13.61	13.61	13.61	13.66	13.66	13.63	13.66	13.55	13.55	13.58	13.52	13.60	13.58	13.60	13.63	13.63			
Total	Press	13.66	13.69	13.83	13.96	14.18	14.21	14.10	13.96	13.83	13.72	13.66	13.72	13.79	13.79	14.03	14.19	14.37	14.19	14.00	13.82	13.74	13.69			
_	NOX	12.9	12.4	12.3	11.8	12.3	12.5	12.6	14.2	13.1	15.7	15.5	12.4	14.1	14.1	14.4	13.7	13.4	13.7	14.7	15.0	15.0	15.2			
Emission Index	NO.	11.	12.2	12.4	11.3	11.7	11.8	11.8	11.8	12.9	13.5	13.5	15.9	14.9	14.0	13.2	12.9	12.8	13.0	12.7	14.9	16.8	15.9			
missio	HC HC		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	8	7.1	6.3	5.5	4.6	4.6	4.5	4.4	5.4	5.8	7.1	8.7	8.2	7.0	6.2	5.6	5.1	4.9	5,0	5.8	6.9	9.6	12.8			
	Fuel/Air Ratio	.0007	6000	.0012	.0015	.0017	.0017	9100.	.0013	.001	.0007	.0004	.0005	.0007	0100.	.0012	.0015	9100.	.0015	.001	8000	.0004	.0002			
u o	NOX	9.9	7.8	10.0	12.4	14.2	14.6	13.9	12.9	10.1	8.2	5.6	5.2	7.7	10.3	12.4	14.4	15.0	14.2	11.9	8.8	5.0	3.3			
mposition	ON	5.8	7.6	10.1	11.8 12.4	13.5	13.8	13.0	10.7 12.9	6.6	7.1	4.9	6.7	8.2	10.2	11.4	13.5 14.4	14.3 15.0	13.4 14.2	10.2 11.9	8.7	5.6	3.4			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Measured Oas Co	200	0.17	0.20	0.27	0.34	0.38	0.38	0.36	0.30	0.25	0.17	0.12	0.14	0.18	0.24	0.28	0.34	0.37	0.34	0.26	0.19	0.11	0.07			
Meas		5.9	6.4	7.4	7.9	8.6	8.6	7.9	8.1	7.4	6.1	5.2	5.6	6.3	7.4	7.9	8.7	9.1	9.8	7.7	6.7	5.3	4.6			
Radial	Position in.	-85.48	-68.33	-50.62	-32.38	-14.77	99.9	23.96	41.13	59.03	16.61	93.75	-85.35	-68.22	-50.69	-32.88	-15.00	6.16	22.12	40.02	57.80	75.30	92.36			
	Probe No.	7	-	7	-	7	7	7	7	~	-	-	2	2	2	2	2	2	2	2	2	2	2			

Table 38. Summary of Plume Measurements, J79-15, Run No. 28-2.

Run Date 4/15/74, Power Setting MIN A/B, Axial Station 60_ft

	Radial		Measured Gas Co	as Com	mposition	ion			missic	Emission Index	×	Total	Static	Total	Total		Flow Rate	ite, lb/sec-in	c-1n.2	
Probe No.	Position in.	O mdd	82.	D Md	ON M	NON MO	Fuel/Air Ratio	8 2	HC 1b/1000	NO 1b Fue	N Ta	Press		(Calc)	(Meas)	Fuel ₃ (x 10 ⁻³)	00 ×	HC_6 (x 10_6)	NO 5	NO _{x_5}
	92.49	25.7	25.7 0.14	-7.8	2.7	4.0	9000	35.9	0	6.2	9.2	13.72	13.60		582	0.03	0.11	0	0.02	0.03
2	72.20	39.0	39.0 0.23	-5.7	4.5	0.7 8	0100.	32.9	0	6.3	8.6	13.77	13.60		626	0.07	0.23	0	0.04	0.07
2	57.47	53.6	0.39	-1.9	6.4	10.4	.0018	27.2	0	5.4	8.7	14.00	13.55		689	0.19	0.52	0	01.0	0.17
2	39.42	72.8	72.8 0.51	9.0	8.1	13.6	.0024	27.9	0.1	5.1	8.6	14.11	13.60		718	0.26	0.73	0	0.13	0.22
2	21.23	87.1	87.1 0.62	2.2	9.6	15.0	.0029	27.9	0.4	5.1	6.7	14.27	13.52		092	0.38	1.06	0.2	0.19	0.30
2	4.91	92.4	92.4 0.65	4.0	10.2	16.3	00000	28.1	9.0	5.1	8.2	14.40	13.55		778	0.42	1.18	0.3	0.21	0.34
2	-16.36	86.0	86.0 0.63	3.4	9.9	15.8	.0030	26.8	0.5	5.1	8.1	14.29	13.50		762	0.40	1.07	c.2	0.20	0.32
2	-34.54	74.8	74.8 0.53	1.5	9.1	14.0	.0025	27.6	0.3	5.5	8.5	14.19	13.55		740	0.30	0.83	0.1	0.17	0.26
2	-52,63	58.3	0.38	-1.2	6.7	10.9	7100.	30.0	0	5.6	9.3	13.95	13.58		556	0.19	0.57	0	0.11	0.18
2	-70.42	46.0	0.28	-2.5	5.4	8.5	.0012	32.3	0	6.2	9.8	13.82	13.63		547	60.0	0.29	0	90.0	60.0
2	-87.78	33.4	0.18	-4.9	3.8	5.9	.0008	35.6	0	6.7	10.4	13.77	13.68		547	0.04	1.42	0	0.03	0.04
-	-88.07	34.0	0.20	-4.0	4.4	6.5	9000	33.9	0	7.2	10.6	13.72	13.77		621	0	0	0	0	0
-	-70.52	46.7	46.7 0.28	-3.2	5.9	8.5	.0013	32.7	0	6.7	9.7	13.77	13.66		649	0.07	0.23	0	0.05	0.07
-	-52.55	60.3	0.37	-0.2	6.7	10.2	.0017	31.8	0	5.8	8.9	13.85	13.58		684	0.14	0.45	0	0.08	0.12
-	-34.29	75.6	75.6 0.46	1.0	8.2	13.2	.0021	32.6	0.2	5.8	9.4	14.07	13.64		726	0.21	89.0	0	0.11	0.20
-	-16.01	82.4	0.54	-	9.2	15.0	.0025	30.0	0.2	5.5	9.0	14.26	13.64		751	0.30	06.0	0.1	0.17	0.27
-	5.09	83.9	0.58	0.8	8.6	15.1	.0027	28.7	0.1	5.5	8.5	14.34	13.56		764	0.36	1.03	0	0.20	0.31
1	22.14	78.4	0.53		9.0	14.7	.0025	28.9	0.2	5.5	8.9	14.26	13.56		748	0.32	0.92	0.1	0.18	0.28
-	40.47	71.2	0.46	0.1	7.5	5 12.8	.0021	30.6	0	5.3	9.1	13.99	13.61		720	0.20	0.61	0	0.11	0.18
-	58.65	57.8	0.37	-2.0	6.4	11.0	.0017	30.5	0	5.6	9.6	13.88	13.56		693	0.15	0.46	0	80.0	0.14
1	76.28	40.6	0.22	-5.8	4.7	7.4	.0010	36.2	0	6.9	10.9	13.77	13.61		639	90.0	0.22	0	0.04	0.07
1	93.87	34.8	0.20	-7.5	4.1	0.9	.0009	33.8	0	6.6	9.6	13.66	13.56		615	0.05	0.17	0	0.03	0.05

Table 39. Summary of Plume Measurements, J79-15, Run No. 28-3.
Run Date 4/15/74, Power Setting MID A/B, Axial Station 60 ft

-	_	-	-	_	_	_	-	_	_	-	_	-	-	-	_	_	_	_	_	_	_	_	_	_	_	-
	NO. 5	0.09	0.14	0.18	0.22	0.31	0.32	0.34	0.26	0.15	0.02	0.04	0.08	0.15	0.22	0.34	0.37	0.41	0.32	0.22	0.15	90.0	0.02			
-in.2	NO (x)	0.05	90.0	0.07	0.08	0.11	0.11	0.11	0.08	0.05	0.01	0.01	0.04	0.06	0.09	0.13	0.13	0.14	0.11	0.08	0.05	0.02	0.01			
Flow Rate. 1b/sec-in	HC 61 x3	0.5	8.0	1.3	1.6	2.6	2.9	3.2	2.4	1.5	0.2	6.4	9.0	1.1	1.7	3.0	3.2	3.4	2.5	1.6	1.1	0.3	10			
Flow Ra	\$ 00 Y	0.08	0.12	0.15	0.20	0.27	0.29	0.31	0.23	0.15	0.01	0.37	0.77	1.27	2.03	3.02	3.35	3.56	2.89	1.78	1.28	0.47	0.02			
	Fue1	0.19	0.27	0.35	0.48	0.64	99'0	0.70	0.51	0.30	0.03	20.0	0.16	0.26	0.44	99'0	0.72	0.78	09.0	0.39	0.27	0.09	0.03			
Total	(Meas)	869	728	962	808	887	890	883	843	775	713	179	565	585	587	580	907	919	870	823	749	699	624			
Total	(Calc)																									
2,100		13.38	13.38	13.66	13.38	13.66	13.74	13.45	13.61	13.61	13.87	13.64	13.47	13.45	13.45	13.58	13.50	13.55	13.60	13.58	13.50	13.66	13.63			
Total	Press	13.64	13.72	14.04	13.96	14.38	14.45	14.31	14.21	13.93	13.88	13.72	13,69	13,82	13,95	14.24	14.40	14,56	14.35	14.11	13.90	13.77	13.69			
*	NO	4.8	5.0	5.0	4.6	4.9	4.8	4.8	5.0	5.1	5.1	5.1	5.2	5.6	5.0	5.2	5.1	5.2	5.4	5.6	5.5	8.9	6.1			
n Inde	NO 15	2.6	2.1	1.9	1.7	1.7	1.6	1.6	1.6	1.6	1.9	1.9	2.6	2.3	2.0	1.9	1.8	1.8	1.8	2.1	2.0	2.5	2.8			
Emission Index	1b/1000 1b Fuel	2.6	2.8	3.7	3.4	4.1	4.4	4.5	4.7	5.0	5.8	5.4	3.6	4.1	3.8	4.5	4.4	4.4	4.2	4.2	3,9	3.2	2.4			
ā	8 9	41.9	45.5	41.8	41.4	42.8	43.6	44.2	45.8	48.4	48.2	52.7	48.3	48.7	46.1	45.7	46.5	45.6	48.2	45.7	47.3	52.1	54.1			
	Fuel/Air Ratio	.0024	.0030	.0039	.0043	.0054	.0055	.0053	.0046	.0036	.0022	9100.	.0020	.0025	.0036	.0047	.0054	.0055	.0049	.0037	.0029	7100.	6000			
uc uc	NO _X	7.6	6.6	12.5	12.7	16.7	16.9	16.2	14.8	12.1	7.4	5.6	7.3	9.4	11.8	15.4	17.8	18.4	16.7	13.4	10.4	7.6	3.8			
ositic	NO	4.1	4.1	4.7	8.4	5.7	5.6		4.7	3.9	2.8	2.1	3.5	3.8	8.4	5.6	6.3	6.4	5.8	5.0	3.8	2.8	1.7			
S Comp	нс ррм	13.7	18.3	30.3	30.7	45.8	51.1		46.1	38.3	28.0	19.5	16.0	22.7	29.5	44.0	49.7	51.1	43.2	32.9	24.0	11.6	4.8			
Measured Gas Composition	202	0.51	0.63	0.81	0.89	=	1.14	1.10	0.95	0.75	0.47	0.35	0.43	0.53	0.76	96.0	1.12	1.14	1.00	0.77	09'0	0.36	0.20			
Measu	CO Dbm	110	148	173	190	244	257	250	225	188	111	95.1	108	134	180	227	1	268	249	182	147		55.2	1		
Radial	Position in.	-86.42	-69.05	-51.38	-33.74	-17.36	12.87	26.53	43.92	61.71	79.34	98.84	-78.69	-60.81	-43.31	-25.26	- 7.35	14.49	30.71	48.87	06.99	+	102.18			
	Probe No.	-	-	-	-	7	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	+	2		1	

Table 40. Summary of Plume Measurements, J79-15, Run No. 28-4.

	Kedial	, in	Measured Gas Co		post tion	8		4	100100	Intesion Index		Total	Static	Total	Total		Flow Rate,	ite, lb/sec-in	-in.2	
Probe	-	_	8.*		0 80	X and	Fuel/Air Ratio	8	RC 1000 1	Of I	2	Press	Press	(Calc)	. See	Pue1 (x 10 ⁻³)	(s-0t x)	(x 10 ⁻⁶)	(s-01 x)	(x 10 x)
8	98.14	100	0.29	0	4.5	5.6	.0013	4.6		5.1	6.3	13.64	13.39		654	0.10	0.09	0	0.05	90.0
2	81.11	23.5	0.51	0	7.6	9.5	.0024	9.1	0	4.9	8.8	13.69	13.26		742	0.23	0.21	0	0.11	0.14
2	63.12	33.9	0.81	0	8.11	13.6	.0038	8.3	0	4.8	8.8	13.87	13.34		834	0.39	0.32	0	0.19	0.21
2	45.35	43.3 1.08	1.08	0	15.3	18.0	.0051	8.0	0	4.6	5.5	14.29	13.50		928	0.63	0.50	0	0.29	0.35
2	27.20	50.0 1.26	1.26	0	9.71	21.5	0900	6.7	0	4.6	9.6	14.45	13.39		992	0.83	99.0	0	0.38	0.46
2	11.03	53.0 1.35	1.35	0	0.81	21.8	.0064	7.8	0	4.4	5.4	14.64	13.52		1020	0.90	0.70	0	0.40	0.49
2	-10.87	50.3	1.26	. 0	17.0	21.2	0900	6.7	0	4.4	5.6	14.40	13.42		932	0.82	0.65	0	0.36	0.46
2	-28.76	45.8 1.14	1.14	0	0.91	18.5	.0054	8.0	0	4.6	5.3	14.35	13.71		718	0.67	0.54	0	0.31	0.36
2	-46.91	39.4	0.93	0	13.1	16.1	.0044	8.4	0	4.6	5.7	14.06	13.66		\$85	0.47	0.39	0	0.22	0.27
2	-64.65	29.8	0.67	0	6.6	10.8	.0031	6.8	0	4.9	5.3	13.85	13.55		\$80	0.29	0.26	0	0.14	0.15
2	-81.99	23.3	0.49	0	7.1	8.8	.0022	9.5	0	4.8	6.9	13.77	13.58		878	0.17	0.16	0	90.0	0.10
1	-90.95	24.2	0.48	0	6.8	9.8	.0022	10.0	0	6.1	6.9	13.55	13.27		726	0.18	0.18	0	0.11	0.11
1	-73.21	28.1	0.60	0	10.3	11.11	.0028	9.2	0	5.6	0.9	13.80	13.48		778	0.23	0.21	0	0.13	0.14
1	-55.16	31.5	0.71	0	11.3	13.8	.0033	8.8	0	5.3	6.4	13.80	13.32		823	0.33	0.29	0	0.17	0.21
1	-37.41	34.9	0.80	0	11.5	16.2	.0037	8.7	0	4.7	6.7	13.93	13.40		834	0.39	0.34	0	0.18	0.26
1	-19.42	41.0	96.0	0	14.8	16.3	.0046	8.3	0	5.0	5.5	14.18	13.40		908	0.56	0.46	0	0.28	0.31
1	7.53	46.7	1.16	0	16.7	9.61	.0055	8.0	0	4.8	5.6	14.50	13.74		978	0.65	0.52	0	0.31	0.36
1	21.01	47.1 1.15	1.15	0	16.5	19.2	.0055	8.1	0	4.7	5.5	14.37	13.43		963	0.72	0.58	0	0.34	0.40
1	38.49	41.0	96.0	0	14.1	16.6	.0046	8.3	0	4.8	9.6	14.34	13.77		919	0.48	0.40	0	0.23	0.27
1	56.54	32.5	0.71	0	0.11	12.5	.0033	9.1	0	5.1	5.8	13.96	13.77		918	0.21	0.19	0	0.11	0.12
1	74.27	28.7	0.60	0	8.6	11.7	.0028	9.4	0	5.3	6.4	13.74	13.51		773	0.20	0.19	0	0.11	0.13
1	91.83	23.5	0.43	0	7.5	8.3	.0020	10.9	0	5.7	6.4	13.80	13.51		726	0.16	0.17	0	0.09	0.10
		1				1														

Table 41. Summary of Plume Measurements, J85-5, Run No. 32-1.
Run Date 12/19/74, Power Setting MIL Axial Station 0 ft

Name	March Marc	H	,				-									Total	Total		Plow Bo	to 15/60	2	
Physical Part Part Part Part Part Part Part Part	NG NG NG NG Press (CHC) (Meas) (CL) (Meas) (CL) (Meas) (CL) (Meas) (CL) (Meas) (CL) (Meas) (CL) (Meas)	Measured	Sured		3	ပျင်	081 t10	1			188101	Inde		Total		Temp	Temp		LION WB	e, 10/ se		-
5.2 11.5 0.050 37.8 0.5 14.38 13.54 891 0.72 0.72 0.4 0.2 0.4 0.2 0.4 0.2 0.4 13.6 13.6 13.6 13.6 13.6 13.6 13.6 13.6 13.6 13.6 13.6 13.6 0.4 2.6 4.1 29.16 13.19 6.12 2.04 2.0 1.79 13.6 1.79 0.0 2.0 1.79 1.72 1.72 1.72 1.72 1.72 1.72 1.72 1.72 0.0 2.0 1.79 1.72 0.0 2.0 1.79 1.72 1.72 0.0 2.0 1.79 1.72 1.72 0.0 2.0 1.79 1.72 1.72 0.0 1.70 <	13.7 28.3 44.1 0.02 0.7 0.03 0.28 0.4 0.29 0.7 0.29 0.24 0.29 13.7 28.3 44.1 0.012 3.3 0.4 2.6 4.1 29.16 1739 6.12 2.04 2.4 1.99 13.2 4 31.3 52.8 0.082 3.3 0.4 2.6 4.1 29.57 1772 6.40 2.02 1.9 1.96 7.2 33.6 54.0 0.082 3.1 0.2 2.6 4.6 29.72 1783 6.48 2.02 1.3 1.86 7.2 33.6 54.0 0.082 3.1 0.2 2.6 4.7 29.82 1779 6.48 2.02 1.3 1.86 7.2 33.6 54.0 0.082 3.1 0.2 2.6 4.7 29.92 1779 6.48 2.02 1.3 1.86 7.2 30.6 54.0 0.082 3.1 0.2 2.6 4.7 29.92 1779 6.48 2.02 1.3 1.86 11.2 5.1.6 4.2 0.0.2 0.0 2.6 4.7 2	Position CO CO ₂	_	22	E 0				Fuel/Air Ratio	89	HC 10001	NO NO	Š,	Press		(Calc)	(Meas)	Fuel (x 10 ⁻³)	¢ 10-4	(x 10 ⁻⁶)		(× 10-5)
13.4 4.1 0.012 3.3 0.4 2.6 4.1 29.1 1719 6.12 2.04 2.04 2.04 1.39 1.39 12.4 31.7 49.6 0.0181 32.2 0.3 2.6 4.4 29.57 1719 1779 6.40 2.06 1.9 1.79 1.88 12.2 31.2 0.2 2.0 4.6 2.0 1.79	13.7 28.2 44.1 0.12 33.3 0.4 2.6 4.1 29.16 1719 6.12 2.04 2.4 1.39 8.5 33.2 32.8 0.08 32.2 0.3 2.8 4.4 29.37 1.172 6.40 2.04 1.3 1.39 8.5 3.3 28.8 0.08 31.7 0.2 2.9 4.7 29.82 1.178 6.48 2.00 1.3 1.8 7.2 32.7 0.184 30.7 0.2 2.9 4.7 29.82 1.178 6.48 2.00 1.3 1.8 1.8 1.9 1.8 1.8 1.9 1.8 1.8 1.8 1.9 1.9 1.189 1.8 1.9 1.9 1.8 1.9 1.18 1.8 1.9 1.9 1.8 1.9 1.18 1.8 1.8 1.8 1.18 1.18 1.8 1.9 1.18 1.18 1.18 1.18 1.18 1.18 1.			1.0		2	10.3	11.5	.0050	37.8	0.5	3.2	3.6	14.38	13.54	891		0.73	0.28	0.4	0.23	0.26
1.2. 4 3.1. 49.6 0.0181 32. 2 0.4 4 29.73 1.772 0.702 0.702 1.79 </td <td>11.2 31.7 48.6 0.01 22.8 4.4 29.57 1772 1772 6.40 2.06 1.9 1.79 1.2 31.2 62.8 0.083 31.2 0.2 2.6 4.6 29.72 1.789 6.49 2.02 1.3 1.88 1.2 31.2 0.01 2.0 4.6 29.72 1.789 6.49 2.02 1.3 1.88 1.2 32.1 0.01 2.0 4.6 29.72 1.789 6.45 2.02 1.3 1.94 1.1.1 31.1 0.182 31.4 0.2 2.0 4.7 29.92 1.789 6.45 2.02 1.3 1.94 1.88 1.94</td> <td>-5.72 606 3.5</td> <td>Н</td> <td>3.5</td> <td></td> <td>1</td> <td>28.3</td> <td>44.1</td> <td>.0172</td> <td>33.3</td> <td>0.4</td> <td>2.6</td> <td>4.1</td> <td>29.16</td> <td></td> <td>1719</td> <td></td> <td>6.12</td> <td>2.04</td> <td>2.4</td> <td>1.59</td> <td>2.51</td>	11.2 31.7 48.6 0.01 22.8 4.4 29.57 1772 1772 6.40 2.06 1.9 1.79 1.2 31.2 62.8 0.083 31.2 0.2 2.6 4.6 29.72 1.789 6.49 2.02 1.3 1.88 1.2 31.2 0.01 2.0 4.6 29.72 1.789 6.49 2.02 1.3 1.88 1.2 32.1 0.01 2.0 4.6 29.72 1.789 6.45 2.02 1.3 1.94 1.1.1 31.1 0.182 31.4 0.2 2.0 4.7 29.92 1.789 6.45 2.02 1.3 1.94 1.88 1.94	-5.72 606 3.5	Н	3.5		1	28.3	44.1	.0172	33.3	0.4	2.6	4.1	29.16		1719		6.12	2.04	2.4	1.59	2.51
8.6 3.2 6.4 5.0 6.4 2.0 1.8 1.2 1.2 1.2 <td>8.6 53.2 6.2.8 0.083 31.2 0.2 4.6 29.72 1789 6.38 2.02 1.3 1.88 7.2 34.2 53.7 0.2 3.0 4.7 29.82 1783 6.48 2.00 1.3 1.88 9.1 32.6 6.08 31.4 0.2 2.0 4.7 29.82 1779 6.48 2.00 1.3 1.88 11.7 31.2 32.2 0.080 32.3 0.2 2.9 4.7 29.92 1779 6.49 2.04 1.3 1.88 11.7 31.2 0.080 32.3 0.3 2.8 4.7 29.92 1779 6.49 2.04 1.3 1.88 11.8 0.0 0.0 2.6 4.7 29.92 1779 6.49 2.07 1.9 1.88 11.9 0.0 0.0 2.6 4.7 1.9 1.2 2.0 1.9 1.0 2.0 1.9 2</td> <td>-4.29 615 3.</td> <td>-</td> <td>3.</td> <td></td> <td>4</td> <td>31.7</td> <td>9.64</td> <td>.0181</td> <td></td> <td>0.3</td> <td>2.8</td> <td>4.4</td> <td>29.57</td> <td></td> <td>1772</td> <td></td> <td>6.40</td> <td>2.06</td> <td>1.9</td> <td>1.79</td> <td>2.82</td>	8.6 53.2 6.2.8 0.083 31.2 0.2 4.6 29.72 1789 6.38 2.02 1.3 1.88 7.2 34.2 53.7 0.2 3.0 4.7 29.82 1783 6.48 2.00 1.3 1.88 9.1 32.6 6.08 31.4 0.2 2.0 4.7 29.82 1779 6.48 2.00 1.3 1.88 11.7 31.2 32.2 0.080 32.3 0.2 2.9 4.7 29.92 1779 6.49 2.04 1.3 1.88 11.7 31.2 0.080 32.3 0.3 2.8 4.7 29.92 1779 6.49 2.04 1.3 1.88 11.8 0.0 0.0 2.6 4.7 29.92 1779 6.49 2.07 1.9 1.88 11.9 0.0 0.0 2.6 4.7 1.9 1.2 2.0 1.9 1.0 2.0 1.9 2	-4.29 615 3.	-	3.		4	31.7	9.64	.0181		0.3	2.8	4.4	29.57		1772		6.40	2.06	1.9	1.79	2.82
7.2 34.5 34.7 36.5 37.0 47.7 29.82 1793 6.52 2.00 1.3 1.96 7.2 33.6 34.0 0.12 3.0 4.8 29.82 1783 6.48 2.02 1.3 1.94 9.1 32.4 0.12 3.1 0.2 2.9 4.7 29.92 1783 6.48 2.04 1.3 1.84 11.1 31.3 52.2 0.08 2.3 0.2 2.4 2.9 2.9 1779 6.34 2.0 1.9 1.84 18.9 36.2 30.0 2.2 4.7 29.92 1.728 6.3 2.0 1.8 1.8 18.9 36.2 30.0 2.2 4.4 2.9 2.0 1.739 6.3 2.1 1.65 1.8 18.9 30.0 30.2 2.4 4.7 1.94 864 0.69 0.30 0.7 0.18 2.2 4.1 1.2	7.2 34.3 53.7 0.084 30.7 0.02 3.0 4.7 29.82 1793 6.52 2.00 1.3 1.94 7.2 34.6 54.0 0.082 31.1 0.2 3.0 4.8 29.82 1783 6.48 2.02 1.3 1.94 11.2 32.6 54.0 0.0182 31.4 0.2 3.0 4.7 29.92 1779 6.48 2.02 1.3 1.94 11.2 32.2 0.316 34.2 0.2 2.8 4.7 29.92 1779 6.43 2.04 1.94 1.88 11.2 32.2 0.316 0.32 0.4 2.9 2.9 1.72 1.72 0.24 2.0 2.8 4.7 2.9 1.72 0.30 0.3 0.4 2.9 1.72 0.30 0.3 0.4 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 <	-2.87 604 3	-	60		.5	33.3	52.8	.0183	31.2	0.2	2.9	4.6	29 . 72		1789		6.49	2.02	1.3	1.88	2.99
11.2 31.6 64.0 31.0 62.0 31.0 29.82 1779 64.49 2.02 11.3 11.94 11.1 31.4 62.2 2.9 4.7 29.92 1779 64.49 2.04 11.3 11.86 11.1. 31.4 62.2 2.9 4.7 29.92 1779 6.49 2.04 11.9 11.81 18.9 62.0 48.0 32.2 0.14 2.6 4.7 29.92 1779 6.49 2.04 11.81 18.8 18.9 66.0 48.0 30.1 2.6 4.7 29.92 1779 6.31 2.17 2.18 1.7 29.92 1779 2.17 2.17 2.18 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.4 29.23 1.14 1.4 29.24 1.4 29.24 1.4 29.24 1.4 29.24 1.4 29.24 <	11.2 33.6 64.0 0182 31.1 0.2 3.0 4.8 29.82 1779 6.48 2.02 1.3 1.94 11.1 32.4 0182 31.4 0.2 2.9 4.7 29.92 1779 6.49 2.04 1.3 1.88 11.2 32.2 0.16 34.2 0.4 2.6 4.7 29.92 1779 6.49 2.04 1.3 1.88 18.6 28.1 0.176 34.2 0.4 2.6 4.7 29.92 1778 6.49 2.04 1.3 1.88 18.6 28.0 0.176 35.2 0.2 4.4 2.9 1.728 6.31 2.17 2.5 1.0 2.6 4.7 1.0 2.6 3.1 0.1 2.0 4.1 1.0 2.0 4.1 1.0 2.0 4.1 1.0 2.0 1.2 4.2 1.2 4.2 1.0 4.2 4.1 1.0 2.0 1.2 <td>-1.82 597 3</td> <td></td> <td>6</td> <td></td> <td>2</td> <td>34.3</td> <td>53.7</td> <td>.0184</td> <td>30.7</td> <td>0.2</td> <td>3.0</td> <td>4.7</td> <td>29.82</td> <td></td> <td>1793</td> <td></td> <td>6.52</td> <td>2.00</td> <td>1.3</td> <td>1.96</td> <td>3.06</td>	-1.82 597 3		6		2	34.3	53.7	.0184	30.7	0.2	3.0	4.7	29.82		1793		6.52	2.00	1.3	1.96	3.06
9.1 32.4 53.1 .0182 31.4 0.2 2.9 4.7 29.97 1779 6.45 2.04 1.3 1.88 11.7 31.3 52.2 .0180 32.3 0.3 2.8 4.7 29.97 1767 6.45 2.08 1.9 1.81 15.6 28.3 50.7 .0180 32.3 0.4 2.9 1759 1759 6.34 2.07 1.81 18.9 26.0 .0180 32.3 0.4 2.9 2.9 1759 6.31 2.17 2.0 1.85 1.65 1.85	9.1 32.4 53.1 0.182 31.4 0.2 2.9 4.7 29.92 1779 6.48 2.04 1.3 1.88 11.2 31.2 52.2 0180 32.3 0.4 2.6 4.7 29.92 1767 6.45 2.08 1.9 1.81 11.6 28.3 0.4 2.6 4.7 29.92 1739 6.34 2.17 2.5 1.65 11.9 28.0 0.17 39.2 0.4 4.5 29.92 1739 6.31 2.17 2.5 1.65 1.08 1.2 4.6 29.92 1739 6.31 2.17 2.5 1.0 2.6 4.7 29.92 1739 0.6 3.1 0.7 2.6 4.7 29.92 1729 0.6 3.1 0.7 0.8 2.2 4.2 29.92 1423 0.92 0.8 0.9 4.7 14.94 864 0.90 0.90 0.90 0.90 0.90 0.90	-0.51 600	-	6.3		.2	33.6	54.0	.0182	31.1	0.2	3.0	4.8	29.82		1783		6.48	2.05		1.94	3.11
11.7 31.3 52.2 0180 32.3 0.3 2.8 4.7 29.92 1767 6.34 2.17 2.5 1.65 18.6 28.7 0.16 34.2 0.4 2.6 4.7 29.92 1739 6.34 2.17 2.5 1.65 18.9 26.0 48.8 0.074 36.0 0.5 2.4 4.5 29.92 1728 6.31 2.7 3.2 1.55 18.9 15.0 0.09 39.5 0.8 2.2 4.2 20.61 1.29 0.69 0.30 0.7 0.68 5.2 2.0 31.2 4.1 1.0 2.6 4.7 1.580 1.42 0.69 0.30 0.7 0.18 5.2 2.0 31.2 4.1 1.09 2.6 4.7 1.29 4.7 1.29 1.42 3.04 1.23 0.67 0.7 0.18 5.2 31.2 4.2 4.7 1.29 4	11. 2 28. 2 0180 32. 2 0.0180 32. 3 0.03 2.8 4.7 28.92 1767 6.34 2.17 2.5 1.65 18.6 28.0 0.07 31.2 0.04 2.6 4.7 29.92 1738 6.34 2.17 2.5 1.65 18.9 26.0 0.07 0.04 0.06 0.04 4.2 20.64 4.5 29.92 1738 6.31 2.17 2.5 1.65 18.9 10.04 0.06 0.04 0.06 </td <td>1.14 603</td> <td></td> <td></td> <td></td> <td></td> <td>32.4</td> <td>53.1</td> <td>.0182</td> <td>31.4</td> <td>0.2</td> <td>2.9</td> <td>4.7</td> <td>29.92</td> <td></td> <td>1779</td> <td></td> <td>6.49</td> <td>2.04</td> <td>1.3</td> <td>1.88</td> <td>3.05</td>	1.14 603					32.4	53.1	.0182	31.4	0.2	2.9	4.7	29.92		1779		6.49	2.04	1.3	1.88	3.05
18.6 28.3 50.7 0ife 34.2 0.4 2.6 4.7 29.92 1739 6.34 2.17 2.5 1.65 18.9 26.0 48.8 0.074 36.0 0.5 2.4 4.5 29.92 1728 6.31 2.27 3.2 1.51 18.9 15.0 29.0 0.109 39.5 0.8 2.2 4.2 20.61 1307 3.11 1.23 2.2 0.68 0.09	15.6 68.3 30.7 0.176 34.2 0.4 2.6 4.7 29.92 1739 6.34 2.17 2.5 1.65 18.9 26.0 48.8 .0174 36.0 0.5 2.4 4.5 29.92 1728 6.31 2.7 3.2 1.51 18.9 15.0 0.5 2.4 4.5 29.92 1728 6.31 2.7 3.2 0.68 9.1 1.4 2.0 0.6 4.1 1.0 2.6 4.3 14.94 864 0.630 0.7 0.68 9.2 1.4 1.0 2.6 4.7 12.94 1.4.94 864 0.69 0.7 0.68	2.19 612	-			12	31.3	52.2	0180	32.3	0.3	2.8	4.7	29.97		1767		6.45	2.08	1.9	1.81	3.03
18.9 26.0 48.8 .0174 36.0 0.5 2.4 4.5 29.92 1728 6.31 2.27 3.2 1.51 18.9 15.0 29.0 .0109 39.5 0.8 2.2 4.2 20.61 1307 3.11 1.23 2.5 0.68 9.1 7.4 12.4 .0045 44.1 1.0 2.6 4.3 14.94 864 0.69 0.30 0.7 0.88 5.2 22.0 0.173 3.1 1.0 2.6 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 22.0 3.12 0.1 2.9 4.7 29.04 1742 6.19 2.06 0.67 0.4 0.56 5.2 3.1.6 2.0.7 0.17 3.2 4.7 29.23 1748 6.19 0.67 0.4 0.56 1.81 5.2 3.1.6 2.0.7 0.17 3.1 4.8 29.41	18. 9 26.0 48.8 .0174 36.0 0.5 2.4 4.5 29.92 1728 6.31 2.77 3.2 1.51 18. 9 15.0 29.0 .0109 39.5 0.8 2.2 4.2 20.61 1307 3.11 1.23 2.5 0.68 9.1 7.4 12.4 .0045 34.3 0.2 2.8 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 31.2 0.12 2.9 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 31.2 0.1 2.9 4.7 29.04 1742 6.19 0.60 0.7 0.18 5.2 31.2 0.17 23.2 0.1 2.9 4.7 29.04 1742 6.19 0.60 0.7 0.18 5.2 31.2 0.1 2.9 4.7 29.04 1744 6.29 0.67 0.6 1.80 </td <td>634</td> <td>-</td> <td></td> <td></td> <td>9.</td> <td>28.3</td> <td>50.7</td> <td>9710.</td> <td>34.2</td> <td>0.4</td> <td>2.6</td> <td>4.7</td> <td>29.92</td> <td></td> <td>1739</td> <td></td> <td>6.34</td> <td>2.17</td> <td>2.5</td> <td>1.65</td> <td>2.98</td>	634	-			9.	28.3	50.7	9710.	34.2	0.4	2.6	4.7	29.92		1739		6.34	2.17	2.5	1.65	2.98
18.9 15.0 29.0 .0109 39.5 0.8 2.2 4.2 20.61 1307 3.11 1.123 2.5 0.68 9.1 7.4 12.4 .0045 44.1 1.0 2.6 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 22.0 37.3 .01 2.9 4.7 29.04 1742 6.19 2.02 0.67 0.4 0.56 5.2 31.2 0.17 32.3 0.1 2.9 4.7 29.23 1748 6.19 2.02 0.67 0.4 0.56 1.80 5.2 31.6 52.0 0.077 31.8 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.80 5.2 32.1 52.2 4.7 29.23 1748 6.28 1.99 0.6 1.80 5.2 32.1 51.6 4.7 29.23 1744 6.28 1.99	18.9 15.0 29.0 0.109 39.5 0.8 2.2 4.2 20.61 1307 3.11 1.123 2.5 0.68 9.1 7.4 12.4 0.045 44.1 1.0 2.6 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 3.2 0.12 2.8 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 3.1 0.12 2.8 4.7 15.80 1742 6.18 0.67 0.4 0.55 5.2 3.1 0.17 3.2 0.1 2.9 4.7 29.04 1742 6.18 0.67 0.4 0.55 5.2 3.1 0.17 3.2 0.1 2.9 4.7 29.23 1744 6.25 1.99 0.6 1.81 5.2 3.1 0.17 3.2 4.8 29.41 1744 6.26 1.99 0.6 1.82 5.2 </td <td>4.67 660</td> <td>-</td> <td></td> <td></td> <td>6</td> <td>26.0</td> <td>48.8</td> <td>.0174</td> <td>36.0</td> <td>0.5</td> <td>2.4</td> <td>4.5</td> <td>29.92</td> <td></td> <td>1728</td> <td></td> <td>6.31</td> <td>2.27</td> <td>3.2</td> <td>1.51</td> <td>2.84</td>	4.67 660	-			6	26.0	48.8	.0174	36.0	0.5	2.4	4.5	29.92		1728		6.31	2.27	3.2	1.51	2.84
9.1 7.4 12.4 0045 44.1 1.0 2.6 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 22.0 37.3 0.126 34.3 0.2 2.8 4.7 15.80 1423 0.69 0.30 0.7 0.18 5.2 37.2 0.17 33.2 0.1 2.9 4.7 29.04 1742 6.19 2.06 0.67 0.4 0.55 5.2 31.2 0.17 32.4 0.1 2.9 4.7 29.23 1748 6.19 2.02 0.6 1.81 5.2 31.9 6.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 32.1 6.1 2.9 4.7 29.23 1744 6.28 1.99 0.6 1.81 5.2 32.1 0.16 31.8 0.1 2.9 4.9 29.41 1744 6.28 1.99	9.1 7.4 12.4 0045 64.1 1.0 2.6 4.3 14.94 864 0.69 0.30 0.7 0.18 5.2 2.2.0 37.3 0.12 2.8 4.7 15.80 1423 0.67 0.67 0.7 0.18 5.2 3.1.2 0.12 2.9 4.7 29.04 1742 6.19 2.06 0.67 0.43 0.55 5.2 3.1.2 0.17 2.9 4.7 29.23 1748 6.25 2.02 0.67 1.80 5.2 3.1.6 5.2.0 0.17 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 3.2.1 6.2.2 0.17 3.2 4.7 29.41 1744 6.26 1.99 0.6 1.82 5.2 3.2.1 3.1.6 3.2 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 3.1.2 3.1.4	6.09 455				6	15.0	29.0	6010.	39.5	8.0	2.2	4.2	20.61		1307		3.11	1.23	2.5	89.0	1.31
5.2 3.1 <td>5.2 3.7.2 5.1.7 .0.126 34.3 0.2 2.8 4.7 15.80 1423 1.95 0.67 0.4 0.55 5.2 3.1.2 5.1.7 .0.176 33.2 0.1 2.9 4.7 29.04 1742 6.19 2.06 0.6 1.80 5.2 3.1.6 5.2.0 .0.17 3.2 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 3.1.6 5.2.3 .0.17 3.1 0.1 2.9 4.7 29.23 1748 6.28 1.99 0.6 1.81 5.2 3.1.6 0.17 3.1.8 0.1 2.9 4.7 29.23 1744 6.28 1.99 0.6 1.82 5.2 3.2.4 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 3.1.8 0.1 2.9 4.8 29.41 1744 6.28<!--</td--><td>6.81 209</td><td>\vdash</td><td></td><td></td><td>9.1</td><td>7.4</td><td>12.4</td><td>.0045</td><td>44.1</td><td>1.0</td><td>2.6</td><td>4.3</td><td>14.94</td><td></td><td>864</td><td></td><td>0.69</td><td>0.30</td><td>7.0</td><td>0.18</td><td>0.30</td></td>	5.2 3.7.2 5.1.7 .0.126 34.3 0.2 2.8 4.7 15.80 1423 1.95 0.67 0.4 0.55 5.2 3.1.2 5.1.7 .0.176 33.2 0.1 2.9 4.7 29.04 1742 6.19 2.06 0.6 1.80 5.2 3.1.6 5.2.0 .0.17 3.2 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 3.1.6 5.2.3 .0.17 3.1 0.1 2.9 4.7 29.23 1748 6.28 1.99 0.6 1.81 5.2 3.1.6 0.17 3.1.8 0.1 2.9 4.7 29.23 1744 6.28 1.99 0.6 1.82 5.2 3.2.4 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 3.1.8 0.1 2.9 4.8 29.41 1744 6.28 </td <td>6.81 209</td> <td>\vdash</td> <td></td> <td></td> <td>9.1</td> <td>7.4</td> <td>12.4</td> <td>.0045</td> <td>44.1</td> <td>1.0</td> <td>2.6</td> <td>4.3</td> <td>14.94</td> <td></td> <td>864</td> <td></td> <td>0.69</td> <td>0.30</td> <td>7.0</td> <td>0.18</td> <td>0.30</td>	6.81 209	\vdash			9.1	7.4	12.4	.0045	44.1	1.0	2.6	4.3	14.94		864		0.69	0.30	7.0	0.18	0.30
5.2 31.2 51.7 0.076 33.2 0.1 2.9 4.7 29.04 1742 6.19 2.06 0.6 1.80 5.2 31.6 52.0 0.077 32.3 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 31.9 52.2 0.077 31.7 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 32.1 32.9 0.07 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.15 32.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 <t< td=""><td>5.2 31.2 51.7 .0176 33.2 0.1 2.9 4.7 29.04 1742 6.19 2.06 0.6 1.80 5.2 31.6 32.0 .017 32.3 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 31.9 52.3 .017 31.7 0.1 2.9 4.7 29.23 1748 6.28 1.99 0.6 1.82 5.2 32.1 52.3 .0176 31.8 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 31.3 52.8 0.175 32.4 0.2 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 8.5 29.8 51.5 4.8 29.41 1736 6.28</td><td>6.18 456</td><td></td><td></td><td></td><td>2</td><td>22.0</td><td>37.3</td><td>.0126</td><td>34.3</td><td>0.2</td><td>2.8</td><td>4.7</td><td>15.80</td><td></td><td>1423</td><td></td><td>1.95</td><td>0.67</td><td>0.4</td><td>0.55</td><td>0.92</td></t<>	5.2 31.2 51.7 .0176 33.2 0.1 2.9 4.7 29.04 1742 6.19 2.06 0.6 1.80 5.2 31.6 32.0 .017 32.3 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 31.9 52.3 .017 31.7 0.1 2.9 4.7 29.23 1748 6.28 1.99 0.6 1.82 5.2 32.1 52.3 .0176 31.8 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 31.3 52.8 0.175 32.4 0.2 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 8.5 29.8 51.5 4.8 29.41 1736 6.28	6.18 456				2	22.0	37.3	.0126	34.3	0.2	2.8	4.7	15.80		1423		1.95	0.67	0.4	0.55	0.92
5.2 31.6 52.0 .017 32.3 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 31.9 52.3 .017 31.8 0.1 2.9 4.7 29.23 1754 6.25 1.99 0.6 1.82 5.2 32.3 .017 31.8 0.1 2.9 4.7 29.23 1748 6.28 1.99 0.6 1.82 5.2 32.4 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.3 0.2 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.3 32.4 0.2 2.9 4.9 29.41 1744 6.26 1.99 0.6 1.82 8.5 29.8 51.3 29.	5.2 31.6 52.0 .017 32.3 0.1 2.9 4.7 29.23 1748 6.25 2.02 0.6 1.81 5.2 31.9 52.3 .017 31.8 0.1 2.9 4.7 29.23 1754 6.28 1.99 0.6 1.82 5.2 32.1 52.3 .017 31.7 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 31.3 6.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 6.5 31.3 6.2 4.8 29.41 1744 6.28 1.99 0.6 1.82 8.5 29.8 6.1 29.41 1744 6.28 1.99 0.6 1.82 8.5 29.8 1.2 4.8 29.4	-5.10 616	919			2	31.2	51,7	9210	33.2	0.1	2.9	4.7	29.04		1742		6.19	2,06	9.0	1.80	2.91
5.2 31.9 52.3 .0178 31.8 0.1 2.9 4.7 29.23 1754 6.27 1.99 0.6 1.82 5.2 32.1 52.2 0.077 31.7 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 5.2 32.2 52.7 .0176 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.2 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.3 32.4 0.2 2.9 4.9 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.3 52.7 4.8 29.41 1744 6.26 1.99 0.6 1.82 8.5 29.8 51.3 4.8 29.41 1744 6.26 1.99 0.6 1.82 8.5 29.8 <t< td=""><td>5.2 31.9 52.3 .0178 31.8 0.1 2.9 4.7 29.23 1754 6.28 1.99 0.6 1.82 5.2 22.1 52.5 .0177 31.7 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 5.2 32.2 32.7 .0176 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 20.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.3 52.4 0.2 2.9 4.9 29.41 1744 6.26 1.99 0.6 1.82 8.5 29.8 31.3 6.2 4.8 29.41 1736 6.26 1.99 0.6 1.82 8.5 29.8 51.5 4.8 29.43 1728 6.28 2.10 1.81 1.54 9.8 <</td><td>-4.02 603</td><td>603</td><td></td><td></td><td>2</td><td>31.6</td><td>52.0</td><td>77.00.</td><td>32.3</td><td>0.1</td><td>2.9</td><td>4.7</td><td>29.23</td><td></td><td>1748</td><td></td><td>6.25</td><td>2.02</td><td>9.0</td><td>1.81</td><td>2.94</td></t<>	5.2 31.9 52.3 .0178 31.8 0.1 2.9 4.7 29.23 1754 6.28 1.99 0.6 1.82 5.2 22.1 52.5 .0177 31.7 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 5.2 32.2 32.7 .0176 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 20.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.3 52.4 0.2 2.9 4.9 29.41 1744 6.26 1.99 0.6 1.82 8.5 29.8 31.3 6.2 4.8 29.41 1736 6.26 1.99 0.6 1.82 8.5 29.8 51.5 4.8 29.43 1728 6.28 2.10 1.81 1.54 9.8 <	-4.02 603	603			2	31.6	52.0	77.00.	32.3	0.1	2.9	4.7	29.23		1748		6.25	2.02	9.0	1.81	2.94
5.2 32.1 52.2 32.7 0.077 31.7 0.1 2.9 4.8 29.41 1744 6.28 1.99 0.6 1.82 5.2 32.2 32.7 0.076 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.2 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.2 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 8.5 29.8 51.3 0.0 2.9 4.9 29.41 1744 6.26 1.99 0.6 1.82 8.5 29.8 51.3 2.9 4.8 29.41 1736 6.28 1.99 0.6 1.82 1.82 9.8 29.8 51.5 4.8 29.23 1728 6.18 2.10 1.8 1.64 11.1 27.5 <th< td=""><td>5.2 32.1 52.2 52.7 0.17 31.7 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 5.2 22.2 22.7 0.176 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.17 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 8.5 31.3 6.2 2.9 4.9 29.41 1736 6.26 1.99 0.6 1.82 8.5 2.0.8 4.1 3.2 4.8 29.43 1728 6.28 1.2 1.81 1.81 9.8 2.6 4.8 29.23 1703 6.08 2.10 1.8 1.54 11.1 2.5 0.0 0.15 2.6 4.7</td><td>-2.59 596</td><td>969</td><td>100</td><td></td><td>2</td><td>31.9</td><td>52.3</td><td>.0178</td><td>31.8</td><td>0.1</td><td>2.9</td><td>4.7</td><td>29.23</td><td></td><td>1754</td><td></td><td>6.27</td><td>1.99</td><td>9.0</td><td>1.82</td><td>2,95</td></th<>	5.2 32.1 52.2 52.7 0.17 31.7 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 5.2 22.2 22.7 0.176 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 0.17 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 8.5 31.3 6.2 2.9 4.9 29.41 1736 6.26 1.99 0.6 1.82 8.5 2.0.8 4.1 3.2 4.8 29.43 1728 6.28 1.2 1.81 1.81 9.8 2.6 4.8 29.23 1703 6.08 2.10 1.8 1.54 11.1 2.5 0.0 0.15 2.6 4.7	-2.59 596	969	100		2	31.9	52.3	.0178	31.8	0.1	2.9	4.7	29.23		1754		6.27	1.99	9.0	1.82	2,95
5.2 32.2 52.7 0.176 31.8 0.1 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 22.7 0.176 31.8 0.2 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 22.7 0.176 31.8 0.2 2.9 4.9 29.41 1736 6.26 1.99 1.3 1.82 8.5 29.8 51.3 0.174 33.4 0.2 2.9 4.8 29.23 1728 6.17 2.06 1.2 1.73 9.8 26.6 50.7 0.070 34.5 0.3 2.7 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.7 50.0 0.067 35.4 0.3 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	6.5 31.8 6.1 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 52.7 0.16 31.8 0.2 2.9 4.8 29.41 1744 6.26 1.99 0.6 1.82 6.5 31.8 22.7 0.17 32.4 0.2 2.9 4.9 29.41 1736 6.26 1.99 1.3 1.82 8.5 29.8 31.3 6.2 4.9 29.41 1736 6.28 1.0 1.81 1.81 9.8 29.8 51.5 0.17 33.4 0.2 2.9 4.8 29.23 1728 6.08 2.10 1.81 1.64 11.1 27.5 50.0 0.167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 0.087 4.7 15.10 1155 1.24 0.51 0.6 0.32	-1.54 591	591			2	32.1	52.5	7710.	31.7	0.1	2.9	4.8	29.41		1748		6.28	1.99	9.0	1.82	3.01
6.5 31.8 52.7 .0176 31.8 0.2 2.9 4.8 29.41 1744 6.26 1.99 1.3 1.82 6.5 31.3 52.8 0.015 32.4 0.2 2.9 4.9 29.41 1736 6.28 2.02 1.2 1.81 8.5 29.8 51.3 0.014 33.4 0.2 2.8 4.8 29.23 1728 6.17 2.06 1.2 1.73 9.8 26.6 50.7 0.017 34.5 0.3 2.7 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 0.0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	6.5 31.8 62.7 .0176 31.8 0.2 2.9 4.8 29.41 1744 6.26 1.99 1.3 1.82 6.5 31.3 52.8 .0175 32.4 0.2 2.9 4.9 29.41 1736 6.23 2.02 1.2 1.81 8.5 29.8 51.5 .0174 33.4 0.2 2.9 4.9 29.43 1728 6.17 2.06 1.2 1.81 9.8 28.6 50.7 .0170 34.5 9.2 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	-0.62 591	591		3.65		32.2	52.7	9210.	31.8	0.1	2.9	8.4			1744		6.26	1.99	9.0		3.00
6.5 31.3 52.8 .0175 32.4 0.2 2.9 4.9 29.41 1736 6.23 2.02 1.2 1.81 8.5 29.8 51.5 .0174 33.4 0.2 2.8 4.8 29.23 1728 6.17 2.06 1.2 1.73 9.8 28.6 50.7 .0170 34.5 0.3 2.7 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	6.5 31.3 52.8 .0175 32.4 0.2 2.9 4.9 29.41 1736 6.23 2.02 1.2 1.81 8.5 29.8 51.5 .0174 33.4 0.2 2.9 4.8 29.23 1728 6.17 2.06 1.2 1.73 9.8 28.6 50.7 .0170 34.5 9.3 2.7 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	0.88 591	591			.5	31.8	52.7	9210.	31.8	0.2	2.9	4.8	29.41		1744		6.26	1.99	1.3	1.82	3.00
8.5 29.8 51.5 .0174 33.4 0.2 2.8 4.8 29.23 1728 6.08 2.10 1.2 1.73 9.8 28.6 50.7 .0170 34.5 0.3 2.7 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	8.5 29.8 51.5 .0174 33.4 0.2 2.8 4.8 29.23 1728 6.17 2.06 1.2 1.73 9.8 28.6 50.7 .0170 34.5 9.2 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	1.87 597	265			.5	31.3	52.8	.0175	32.4	0.2	2.9	4.9	29.41		1736		6.23	2.02		1.81	3.05
9.8 28.6 50.7 .0170 34.5 9.3 2.7 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	9.8 28.6 50.7 .0170 34.5 9.3 2.7 4.8 29.20 1703 6.08 2.10 1.8 1.64 11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.032	3.29 613	613			.5	8.62	51.5	.0174	33.4	0.2	2.8	4.8	29.23		1728		6.17	2.06	1.2	1.73	2.96
11.1 27.5 50.0 .0167 35.4 0.3 2.6 4.8 29.04 1687 5.99 2.12 1.8 1.56 9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1155 1.24 0.51 1.8 1.56	4.37 618	618			8.	28.6	50.7	.0170	34.5	5.0	2.7	4.8			1703		80.9	2.10	1.8	1.64	2.92
9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 1155 1.24 0.51 0.6 0.32	9.1 14.5 25.9 .0087 41.3 0.5 2.6 4.7 15.10 V 1155 1.24 0.51 0.6 0.32	5.45 625	625		1	-	27.5	50.0	7910.	35.4	0.3	2.6	8.4	29.04	-•	1687		66.5	2.12	1.8	1.56	2.88
		6.53 380	380			7	14.5	25.9	.0087	41.3	0.5	2.6	4.7	15.10		1155		1.24	0.51			0.58
				1																		

Table 42. Summary of Plume Measurements, J85-5, Run No. 32-2. Run Date 12/19/74, Power Setting MIN A/B, Axial Station 0 ft

	_	-	-	_	_	_	_			_	_	_	_	-					_	-	-	-					
	NOx	(x 10_3)	0.22	2.07	2.59	2.67	2.46	2.35	2.32	2.40	2.42	2.08	1.22	0.50	0.58	2.10	2.53	2.34	2.27	2.33	2.34	2.43	2.43	2.27	1.87	0.42	
in. 2	NO	(x 10 2)	60.0	0.40	0.59	0.67	0.32	0.24	0.24	0.33	0.42	0.25	0.24	0.11	0.14	0.32	0.49	0.32	0.23	0.30	0.23	0.32	0.40	0.32	0.23	60.0	
e, 1b/sec-in	HC	(x 10 %)	0.84	7.80	1.31	1.29	3.95	5.86	5.92	3.21	1.44	5.15	7.63	2.94	3.65	5.37	1.14	2.07	4.35	5.84	3.77	1.91	1.24	1.48	8.67	2.43	
Flow Rate,	00	(x 10 4)	0.76	9.18	6.94	5.69	6.45	82.9	6.72	6.25	6.46	9.56	5.15	2.19	2.25	10.27	6.37	6.12	6.51	6.52	6.83	6.29	6.19	6.93	9.53	1.56	
	Fuel	(x 10 %)	97.0	86.7	8.36	8.34	7.94	7.84	66.7	8.26	8.33	8.31	4.86	1.78	2.06	8.09	8.17	8.08	7.83	7.52	7.79	8.09	8.09	8.10	7.81	1.44	
Total	(Meas)	°R																									
Total	(Calc)	°R	855	1977	2290	2294	2087	1989	2028	2191	2266	2122	1465	1089	1198	2126	2298	2232	2070	1934	2072	2232	2272	2252	1935	1135	
Static	Press	psia	13.63																								
Total	Press	psia	14.89	28.91	29.61	29.16	29.16	29.31	29.36	29.36	29.36	29.36	22.53	16.00	16.00	28.12	28.42	28.54	28.70	28.70	28.73	28.63	28.40	28.54	28,35	15.00	
	NOX		2.9	2.6	3.1	3.2	3.1	3.0	2.9	2.9	2.9	2.5	2.5	2.8	2.8	2.6	3.1	2.9	2.9	3.1	3.0	3.0	3.0	2.8	2.4	2.9	
Inde	NO	lb Fuel	1.2	0.5	0.7	8.0	0.4	0.3	0.3	0.4	0.5	0.3	0.5	9.0	0.7	0.4	9.0	0.4	0.3	0.4	0.3	9.0	0.5	0.4	0.3	9.0	i.
Emission Index	НС	16/1000 1	110	97.7	15.7	15.5	8.64	74.8	74.1	38.9	17.3	62.0	157	165	177	66.4	14.0	25.6	55.5	77.77	48.4	23.6	15.3	18.3	111	169	
	8	/q1	7.66	115	83.0	68.2	81.2	86.5	84.1	75.7	77.5	115	106	123	109	127	0.87	8.52	83.2	86.7	87.7	8.77	76.5	85.5	122	108	
	Fuel/Air	Ratio	.0049	.0245	.0277	.0276	.0249	.0239	.0246	.0265	.0272	.0262	.0162	9600	.0117	.0266	.0277	.0268	.0248	.0230	.0247	.0268	.0273	.0271	.0242	.0104	
	×	md	9.3	39.9	52.2	53.3	47.6	44.2	44.2	46.5	48.4	39.5	24.9	16.7	9.02	41.9	52.2	48.5	44.4	43.5	46.1	49.4	49.7	47.1	36.5	19.3	
omposition	NO N	1	4.0	7.1 3	11.9	\vdash	6.2 4	5.1	5.1 4	6.5	8.5	5.5 3	4.7	3.5 1	5.2 2	6.4	10.2 5	6.8	5.3 4	5.2 4	4.9	6.4 4	8.2 4	6.5	4.8	4.1	
Compo	HC N		1148	4850	870 1	859 13.7	2505		3678		944	3277	5235	3288	1	3554	178	1382		3616	2413	1271	839	994	5406	3647	
3	CO ₂ H	П	88.0	4.38	5.53	5.57	4.80	4.45	4 . 59	5.19	5.45	4.89	2.70	1.56	1.89	4.89	5.57	5.33	4.74	4.27	4.74	5.33	5.47	5.39	4.23	1.70	
Measured	00	_	523	2988	2440	2001	2145	2188	2188		2241	3192	1805	1241	1345	3580	2295	2161	2188	2108		2214	2214	2456	3109	1189	
_	-	in.	-7.14	-5.72	-4.29	-3.23	-1.65	-0.41	1.31	2.71	3.78	5.20	6.63	6.99	-6.72	-5.28	-4.20	-2.77	-1.71	-0.53	1.36	2.41 2	3.84	4.92	6.36	7.44	
	Probe	No.	7	-	1	1	1	1	1	1	1	1	1	-	2	2	2	2	2	2	2	2	2	2	2	2	

Table 43. Summary of Plume Measurements, J85-5, Run No. 32-3.

Run Date 12/19/74 , Power Setting MID A/B , Axial Station 0 ft

			-			100		_			_		_	_	_	_	_		_	_	_	_	_	_	_	_	
	NO _x (x 10 ⁻⁵)	0.29	2.33	3.05	3.11	2.55	2.31	2.43	3.07	3.18	2.32	09.0	0.28	0.24	3.04	2.94	2.52	2.26	2.65	3.22	3.26	3.19	2.00	5.10			
-in.2	NO (x 10 5)	0.08	0.81	2.23	1.40	0.38	0.28	0.28	1.23	2.33	1.35	0.12	0.07	0.14	2.13	1.27	0.37	0.27	0.78	2.18	2.42	2.37	0.25	80.0			
e, 1b/sec-in	HC (× 10-4)	0.49	0.62	0.04	0.44	1.99	3.19	3.17	0.76	0.14	0.20	1.04	0.38	0.30	0.51	0.61	2.43	4.27	1.13	0	0.05	0.02	1.35	0.85			
Flow Rate,	00 ×	1.58	5.97	2.27	4.49	6.51	09.7	9.14	7.31	3.86	4.72	4.07	1.71	4.31	3.66	6.21	8.48	8.63	5.98	3.94	3.17	2.84	8.85	3.14			
	Fuel (x 10 ⁻³)	_	8.95	10.15	10.03	9.45	9.24	9.35	10.22	10.01	9.62	2.48	1.06	9.38	10.12	9.80	9.34	9.02	9.80	10.39	10.51	10.30	8.35	1.96			
Total	(Meas)																										
Total 1		1053	2660	3037	2950	8692	2575	2599	2961	3123	2817	1359	1060	2849	3055	2890	2634	2476	2854	3112	3156	3092	2456	1332			
Static	-	13.53																									
Total	Press	15.00	27.39	28.20	28.30	28.15	28.20	28.20	28.45	28.66	28.45	17.01	14.82	27.20	27.80	27.93	28.12	28.00	28.12	28.12	28.12	28.12	26.84	15.81			
×	NO _X	2.6	2.6	3.0	3.1	2.7	2.5	2.6	3.0	3.0	2.4	2.4	2.6	2.6	3.0	3.0	2.7	2.5	2.7	3.1	3.1	3.1	2.4	2.6			
Emission Index	HC NO 1b Fue	0.7	6.0	2.2	1.4	0.4	0.3	0.3	1.2	2.2	1.4	0.5	0.7	1.5	2.1	1.3	0.4	0.3	8.0	2.1	2.3	2.3	0.3	0.4			
Emissi	HC b/1000	43.2	6.9	0.4	4.4	21.1	34.5	33.9	7.4	1.3	2.1	41.8	35.7	3.2	0.5	6.2	26.0	47.3	11.5	0	0.5	0.2	16.2	43.2			
	8	140	66.7	22.4	44.8	68.9	82.2	8.76	71.5	36.4	48.8	164	161	45.9	36.2	63.4	8.06	95.7	61.0	37.9	30.2	27.6	106	160			
	Fuel/Air Ratio	6200.	.0341	.0406	.0394	.0354	.0337	.0343	.0401	.0426	.0367	.0127	6200	.0374	.0412	.0385	.0346	.0324	.0380	.0423	.0431	.0418	.0310	.0122			
uoi	NO _X	12.9	54.1	73.5	73.5	57.1	51.1	53.3	72.6	76.7	53.4	18.8	12.8	57.7	73.5	0.07	26.7	49.4	63.2	6.62	81.7	1.62	46.0	19.7			
npositi	NO	3.4	18.6	54.9	34.3	8.7	6.5	6.9	30.0	56.3	31.5	3.7	3.4	34.2	53.3	30.5	8.1	5.5	18.8	53.1	60.3	9.89	6.0	3.1			
Gas Composition	HC		470	31.9	341	1487	2320	2320	588	111	156	1086	588	234	38.4	470	1796	3061	870	0	38.4	15.6	1000	1086		11	
Measured (CO2	1.47	6.98	8.63	8.22	7.14 1487	6.64 2320	6.71 2320	8.22	8.99	7.65	2.33 1086	1.48	7.79	8.69	7.93	6.85 1796	6.24 306	7.79	8.93	9.15 38.4	8.86 15.6	6.13 1000	2.25 1086			
Mea		1159	2428	978	1894	2608	2955	3580	3076	1669	1922	2188	1350	1837	1606	2618	3358	3302	2483	1726	1407	1241	3497	2054			
Radial	Position in.	-8.05	-6.62	-4.84	-3.41	-1.65	-0.41	1.31	3.07	4.49	6.27	7.70	-7.81	-6.36	-4.92	-3.12	-1.71	-0.53	1.36	2.76	4.56	00.9	7.44	7.97			
	Probe No.	1	-	-	-	1	-	-	-	1	-	1	2	63	2	2	2	2	2	2	2	2	2	2			

Table 44. Summary of Plume Measurements, J85-5, Run No. 33-1.

Run Date 12/20/74, Power Setting MAX A/B, Axial Station 0 ft

	NO _x 5	0.29	2.82	3.74	3.39	2.87	2.54	2.45	3.14	3.74	3.31	1.06	0.52	2.97	3.35	2.85	39	2.11	3.11	3.57	3.70	3.71	2,55	0.74		
			_	3	· ·	2	2	2		3	3	_	0	2	3	2	2	2	3		3	3	2	0		
-1n.2	NO S	1	2.37	3.22	2.77	1.72	1.11	1.11	2.26	3.08	2.68	0.48	0.20	2.13	2.36	1.37	0.52	0.30	1.56	2.55	2.81	2.81	1.78	0.18		
te, 1b/sec-in	HC 5,	0.13	0	0.13	0.75	4.92	9.50	10.14	1.50	0.27	0.13	1.59	0.56	0.19	0.25	3.31	17.11	30.31	3.47	0.26	0.13	0.13	0.11	2.60		
Flow Rate,	80 5	0.66	7.08	18.16	19.23	13.98	12.05	13.37	23.70	25.80	13.87	3.84	1.46	16.60	20.62	14.59	12.86	11.68	19.99	28.07	25.63	26.46	12.10	3.26		
	Fue1	1.37	11.29	12.88	12.57	11.46	11.05	11.14	12.54	13.37	12.72	4.82	2.17	11.86	12.42	11.40	10.37	10.01	11.97	12.76	12.75	12.78	11.10	3.51		
tal	(Meas)	1																								
To	(Re	-	_															-								
Total	(Calc)	1190	3592	3888	3768	3482	3336	3354	3686	3889	3786	2042	1505	3740	3729	3468	3108	3005	3572	3804	3835	3824	3503	1771		
Static	Press	13.67	_																					-		
Total	Press	15.34	26.53	27.69	27.69	27.14	27,14	27.14	27.85	28.40	28.35	19.85	16.00	26.26	27.47	27.08	26.75	26.40	27.40	27.25	27.20	27.30	26.30	17.90		
_	NOX	2.1	2.5	2.9	2.7	2.5	2.3	2.2	2.5	8.2	2.6	2.2	2.4	2.5	2.7	2.5	2.3	2.1	2.6	2.8	2.9	2.9	2.3	2.1		
Emission Index	NO	2.0	2.1	2.5	2.2	1.5	1.0	1.0	1.8	2.3	2.1	1.0	6.0	1.8	1.9	1.2	0.5	0.3	1.3	2.0	2.2	2.2	1.6	0.5		
ission	HC HC	7	0	0.1	9.0	4.3	8.6	9.1	1.2	0.2	0.1	3.3	2.6	0.1	0.2	2.9	16.5	30.1	2.9.	0.2	0.1	0.1	0.1	7.4		
Em	00	48.3	62.7	141	153	122	109	120	189	193	109	7.67	67.2	140	166	128	124	116	167	220	201	207	109	92.9		
	Fuel/Air Ratio	.0092	.0528	.0610	.0584	.0516	.0485	.0491	.0573	.0621	.0580	.0229	.0140	.0575	.0578	.0514	.0443	.0427	.0544	9090	6090	8090	.0516	.0185		
	NO _x	12.0	78.2	103	94.8	77.2	66.5	64.9	85.6	102	7.68	30.5	21.1	83.8	6.06	76.4	60.1	53.0	82.5	98.2	104	102	71.17	24.1		
Composition	NO	1	67.3	88.2	76.4 9	46.8	29.2	28.4	9 6.69	82.5	73.4 8	13.7	7.9 2	8 6.09	63.2 9	37.7	12.2 6	7.5 5	41.6	6 6.07	6.62	0.77	48.7 7	5.7 2		
Compc	IC N	_	4.1 6	6.4	66.3 7	435 4	818	874 2	130 5	28.5 8	0.5 7	151 1	5.0	3.4	423.00	290 3	441 1	+	305 4	5.0	9.3 7	7.0 7	6.4	278		
ed Gas	CO2 H	6	11.11	12.38	11.75 6	10.46	9.82	88.6	6.	$\overline{}$	11.9	4.62	2.84 7	1.65 1	1.52 1		8.77 1	8.36 2538		11.75 28	11.95			3.68		
Measured Ga	00 00	+	3602 1	9410 13	9757	6825 1	5737	6364	11755,11	13117 12.2	6929 11		991	8773 11.65 1	10438 11.52 19.8	7150 10.37	5923	5300	9845 10.77	14527 11	13401 11	13725 11.88	6105 10.58	1808	-	
Radial	_	57	-6.79	-5.01	-3.58	-1.82 6	-0.51 5	1.14 6	2.89	4.31	6.09	7.52	-8.34	-6.54	-5.10 10	-3.30	-1.88	-0.62	1.19	2.58 14	4.01 13	5.81 13	7.25 6	8.33		
	Probe F	1	-	-	-	-	-	-	-	-	1	-	2	2	2	2	2	2	2	2	2	2	2	2		

Table 45. Summary of Plume Measurements, J85-5, Run No. 31-1.

Run Date 12/18/74, Power Setting MIL., Axial Station 30 ft

<u> </u>		1	-		1	1	1				_		1								
	NO _x																				
	NO (x 10)																				
Flow Rate, 1b/sec-in.	^																				
Rate,	Š											-	-								
Flow	8'9 č																				
	Fuel (x 10)																				
Total	(Meas)																				
Total	(Calc)																				
Static	Press																				
Total			13.64	13.64	13.98	14.00	14.50	14.20	4.9 13.85	13.60	13.64	13.64	13.64								
	, W	2.7	4.1	3.9	4.3	4.8	4.8	5.0	4.9	5.3	6.1	5.7	5.5								
Index	NO d	1.3	3.6	4.1	4.8	4.6	4.6	4.6	4.6	4.6	5.5	4.8	5.5					1			
0	1b/1000 1b Fuel	21.9	9.8	4.0	2.8	2.1	1.8	2.0	2.2	3.1	4.7	7.3	9.1								
	00	8.89	61.1	50.1	47.2	43.2	43.1	44.3	42.9	48.5	48.0	59.1	46.0								
	Fuel/Air Ratio		1000.	.0004	8000.	.0012	.0013	.0013	0100.	9000	.0003	1000.	70000.								
	NO _X	0.2	0.7	1.3	2.5	3.9	4.5	4.4	3.5	2.6	1.8	1.0	8.0			1	1	1	1		
=	i udd	0.1	9.0	1.4	2.7	3.7	4.2	4.0	3.4	2.3	1.7	8.0	8.0					1			
	HC I		4.6	4.6	5.1	5.6	5.6	5.6	5.2	5.1	4.7	4.2	4.1					1			
9	2 ≈	0.02	Н		0.18	6.26	0.30	-	-	0.16	0.10	90.0	0.04					1	1		
Measu	D mdd		16.4 0.05	28.7 0.11	43.6	57.4	65.4	63.3 0.28	51.2 0.23	39.4	23.9	17.1	10.4				1	1	1		
Radial	Position 1h.	-61.47	-48.93	-37.37 2	-25.16	-12.88	-0.13	12.17	24.44	36.65	48.75 2	60.73	72.36								
	Probe	1	1	1	1	1	1	1	-	-	1	1	-					1			

Table 46. Summary of Plume Measurements, J85-5, Run No. 31-2.

=	
30	
Station	
Axial	
MIN A/B,	
Setting	
Power	
12/18/74	
Date	
Run	

	_	_	-	-	_	-	_	-	_	_	-	_	_	_	-	_	_	-	-	_	_	_	_	_	_	_	_	
	NOx	(01 x)																										
2.0		(x 10-)												1														
1b/sec-in	HC	10 01		-		-	-	+	-	-	-	-	-	-	-	-	-	+	+	+	-	+	-	-				
	L	Š	L	_	_	-	-	-	_		-			-	-	_	L	1	1	L	-	-	-				_	
Flow Rate,	8	(x 10																										
	Fuel	(x 10)																										
Total	(Meas)	. B																										
Total																												
Statio		psia																										
Total	Press	psia	13.64	13.64	13.64	13.64	13.80	14.00	14.20	14,05		13.64	13.64	13.64	13.64													
*	NOX	-	1.3	1.1	1.7	2.0	2.3	2.2	2.3	2.5	2.6	2.8	2.9	3.1	2.7													
Emission Index	NO	1b/1000 1b Fuel	1.3	1.1	1.9	2.1	2.0	1.7	1.5	7	1.8	2.0	2.5	2.9	0.000													
missio	HC	/1000	12.1	36.9	54.6	50.9	53,6	50,2	51.7	54,0	52.1	53.1	57.3	55.8	36.1													
- 4	8	116	18.7	56.0	87.3	87.0	102	103	102	103	101	96.4	85.4	88.4	61.9													
	Fuel/Air	Ratio	.00007	.0002	.0005	.0011	.0018	.0025	.0029	9200	.0020	.0013	8000	,0004	.0002													
-	NOX	bbm	0.2	0.3	0.7	1.5	2.8	3.7	4.3	4.3	3.5	2.5	1.8	1.1	9.0													
ositio		mdd	0.2	0.3	8.0	1.6	2.4	2.8	2.9	2.7	2.4	1.8	1.5	1.0	9.0													
s Comp		wdd	5.3	28.7	70.1	127	210	274	319	303	229	159	115	63.7	25.5													
Measured Gas Composition	200	7	0.04	0.07	0.12	0.23	_	-	-	-	0,40	-	-	0.0	0.07											1		
Measu	00	_	4.1	21.8	26.0	109	200 0.35	282 0.49	315 0.56	290 0,50	224	145 0.27	85.5 0.18	50.4	23.9													
	-	In.	-91.87	-66.50	-53.54	-40.37	-27.07	-13.57	-0.13	13.32	26.72	40.04	53.23	66.25	79.07													
	Probe	No.	-	-	-	-	-	-	1	7	-	-	-	-	-													

Table 47. Summary of Plume Measurements, J85-5, Run No. 31-3.

Run Date 12/18/74, Power Setting MID A/B, Axial Station 30 ft

	_	1		_	_	_	_	_	_	_	_	_	-		_		_	_				
	NO. C 10.																					
2	NO (X)																					
Flow Rate, 1b/sec-in.	C 10'	1																				
Flow Rate	0'01 8'03	Т																				
	K 10 0	1																				
Total																						
-		+																				
Total												_										
	Press	+-																				
Total	Press	-	13.64	13.64	13.64	13.80	14.00	14.20	14.00	13.80	13.64	13.64	13.64									
dex	NO _x	2.8	2.8	3.9	3.7	3.5	3.4	3.3	3.3	3.7	4.1	3.6	3.4									
lon	1b/1000 1b Fuel	0. 2.8	.2 2.8	5.9 4.2	2.7 3.7	1.6 3.0	1.1 2.8	0.9 2.5	1.1 2.4	1.4 2.9	.2 3.3	3.3 3.1	5.9 3.4									
	CO HC	13.8 16.0	19.3 11.2	30.2 5	28.3 2	25.7	26.4	24.5 0	25.6 1	27.3 1	29.3	27.3 3	28.0 5									
		.00000																				
	Fuel/Air Ratio		10001	.0003	1100.	. 0024	.0036	.0045	.0037	.0024	.0013	9000	.0003									
tion	NOX	1_	4 0.4	3 1.2	9 2.9	7 5.5	5 8.1	1 9.5	8.1	6.5 9	3.8	5 1.8	8 0.8									
= 1	NO Wod	8	.6 0.4	1.3	.8 2.9	1 4.7	8.3 6.5	.8 7.1	9.0 5.9	7.3 4.6	.5 3.0	1	8.0 8.	_								
Ses	= =		5	u)	9	51 8.1	-	8		_	9	200										
100	00 udd	2.7 0.04	4.8 0.05	14.9 0.10	36.2 0.25	66.6 0.51	102 0.76	116 0.94	102 0.79	10.8 0.51	44.4 0.30		11.4 0.80									
	Position in. p	-91.87	-75.52	-60.70	-45.92 36	-30.66 66	-15.57	-0.13	15.32	30.41 70	45.67 44	60.46 22.1	75.28 11									
	Probe Po	1	1	1	1	1	1	1	1	1	1	1	1									

Table 48. Summary of Plume Measurements, J85-5, Run No. 31-4.

Run Date 12/18/74, Power Setting MAX A/B, Axial Station 30 ft

		10)																		di in			
	NOx	<u>ئ</u>									_			-									
-1n.2		(x 10																					
Flow Rate, 1b/sec-in		(x 10)																					
low Rate		_												-									
4	-) (x 10																					
	Fuel	(x 10																					
Total	(Meas)	"R																					
Total	(Calc)	æ																					
Static	Press	psia																					
Total	Press	psia	13.64	13.64	13.64	13.65	13.80	14.25	14.50	14.00	13.80	13.64	13.64	13.64	13.64								
*	NO.	-	6.9	2.7	5.0	3.5	3.2	2.8	2.6	3.0	3.5	3.5	3.7	4.7	4.5								
n Inde	NO	1b Fue	5.5	4.0	0.3	3.4	3.1	2.5	2.2	2.5	2.9	3.3	3.6	4.3	3.4								
Emission Index		16/1000	21.7	9.1	4.5	1.1	9.0	0.3	0.2	0.3	0.5	6.0	2.5	0.9	14.0								
ā	8	1P	27.3	25.0	32.4	20.1	17.8	14.9	13.9	15.8	18.3	20.7	27.6	26.0	31.1								
	Fuel/Air	Ratio	0	90000	.0003	9100.	.0034	.0062	8200.	.0058	.0035	7100.	9000	.0001	0								
_	×	E C	0.4	0.3	1.4	3.8	6.9	10.8	12.8	11.1	6.7	4.1	1.7	8.0	0.3								
Composition	NO N	udd	0.3	0.5	1.4	3.7	6.7	9.9	1 6.01 6.	9.2	9.9	3.9	1.6	8.0	0.3	-							
	нс и	mdd	4.4	3.7	4.2	4.0	4.1	4.1 8	3.9	3.9	3.7	3.5	3.6	3.5	3.4								
Measured Gas	2000	7	0.02	0.04	60.0	0.35	0.71	1,29	1.62	1.22	0.74	0.38	0.15	90.0	0.02								
Measur	00	-	2.7	5.1	15.3	35.8	64.1	97.2	113 1	97.2	68.7 0	40.3	20.3	7.6	3.8								
-,	-	in.	-91.90	-76.11	-61.32	-46.27	-31.04	-15.57	-0.13	15.18	30.54 6	45.78	60.83	75.63	90.11								
	Probe P	No.	-	7	-	1	1	1	1	1	1	1	1	1	1								

Table 49. Summary of Plume Measurements, J79-15, Run No. 40-1.

Run Date 1/9/75, Power Setting MIL, Axial Station 0 ft

_															_				charle.				-	_		_	_	
	NO	(5 10 3)	64 0	3.45	7.92	7.72	7.53	7.35	7.36	7.79	7 91	7.58	1 04	1 05	5.23	7.95	7.98	7.66	7.66	7 50	7.45	7.63	8 15	7.83	5.95	1 43		
-1n.2	NO.	(x 10 3)	0.49	3.08	7.34	7.06	6.82	6.65	6.59	70.7	7.05	6.83	0.95	1.02	4.75	7.16	7.12	89.9	92.9	6.74	69.9	6.81	7.31	6.93	5.33	1.30		
te, lb/sec-in	HC .	(× 10_)	0.2	0.3	0	0	9.0	0	0	0.7	0	0	0.1	0.1	0	0	0.7	2.6	9.0	0	9.0	0	0	0	0	0.1		
Flow Rate,	00	(x 10 %)	0.25	1.13	2.19	2.42	2.45	2.49	2.50	2.49	2.50	2.46	0.54	0.50	1.74	2.43	2.59	2.66	2.64	2.67	2.65	2.61	2.65	2.63	2.06	69.0		
	Fue1	(x 10_2)	0.46	3.05	6.44	6.54	6.44	6.39	6.40	6.55	6.59	6.32	0.94	0.95	4.36	6.57	6.65	6.49	6.44	6.36	6.31	6.36	6.47	6.42	4.80	1.19		
Total	(Meas)	°R																										
Total	(Calc)	°R	808	1263	1620	1607	1578	1568	1568	1608	1628	1578	968	963	1433	1631	1631	1594	1571	1547	1536	1547	1578	1588	1424	947		
Static		psia	13.56	-																								
Total	Press	psia	1438	21.00	33.50	34.50	34.60	34.60	34.70	34.50	34.25	33.80	15.50	15.00	25.10	34.00	34.50	34.50	34.80	35.00	35.00	35.00	34.80	34.20	28.00	16.00		
*	NO		10.7 10.7	11.3	12.3	11.8	11.7	11.5	11.5	11.9	12.0	12.0	11.11	11.1	12.0	12.1	12.0	11.8	11.9	11.8	11.8	12.0	12.6	12.2	12.4	12.0		
n Inde	NO	1b Fue	10.7	10.1	11.4	10.8	10.6	10.4	10.3	10.8	10.7	10.8	10.1	10.7	10.9	10.9	10.7	10.3	10.5	10.6	10.6	10.7	11.3	10.8	11.1	10.9		
Emission Index	НС	1b/1000 1b Fue	0.4	0.1	0	0	0.1	0	0	0.1	0	0	0.1	0.1	0	0	0.1	0.4	0.1	0	0.1	0	0	0	0	0.1		
Ĩ	8	-	5.5	3.7	3.4	3.7	3.8	3.9	3.9	3.8	3.8	3.9	5.7	5.3	4.0	3.7	3.9	4.1	4.1	4.2	4.2	4.1	4.1	4.1	4.3	5.8		
	Fuel/Air	Ratio	.0036	.0102	.0156	.0154	.0150	.0148	.0148	.0154	.0157	.0150	.0051	.0061	.0127	.0158	.0158	.0152	.0148	.0145	.0143	.0145	.0150	.0151	.0126	.0059		
on	NOx	wdd	24.9	72.7	119	113	109	106	106	114	117	112	36.2	43.4	95.6	119	117	112	110	107	106	109	117	115	98.2	45.1		
mposition	NO	mdd	24.9	65.1	1111	103	98.5	96.3	95.4	103	105	100	33.1	41.7	86.6	108	105	97.8	97.6	0.96	94.9	6.96	105	102	87.9	41.3		
Gas Con	нс	Mdd	2.9	2.4	1.2	1.2	2.9	1.2	9.0	2.4	9.0	0	1.2	1.2	9.0	9.0	1.8	11.2	4.1	9.0	4.1	1.2	0	0	9.0	1.2		
Measured C	200	*	0.76	2.15	3.28	3.23	3.14	3.11	3.11	3.24	3.30	3.14	1.08	1.29	2.68	3.31	3.31	3.19	3.12	3.04	3.01	3.04	3.14	3.17	2.65	1.25		
Mea	8	mdd	21.0	40.2	56.4	59.3	60.1	61.2	6.09	62.3	63.1	62.0	30.9	34.4	53.3	61.7	64.2	66.0	64.8	63.4	62.8	62.6	64.2	65.6	56.8	36.3		
Radial	Position	In.	-13.29	11.11-	-8.93	-4.56	-2.38	-0.41	2.06	4.24	6.42	8.60	13.33	-12,29	-10.45	-8.23	-6.38	-4.18	-2.37	-0.84	1.99	3.78	5.98	7.82	10.41	12.63		
	Probe	No.	-	-	~	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2		

Table 50. Summary of Plume Measurements, J79-15, Run No. 40-2.

-
0
Station
Axial
A B
MIN A B
Setting
Power
1/9/75
Date
Run

T	- 5	.	2	2		6	0 0	0 0 0	0 2 2 2	6 2 9 9 1			0 2 2 2 4 0 7 2													
	NO _x 5	99.0	4.42	7.02	6.39	5.45	4.46	4.56	5.81	6.59	7.04	4.52	1.00	0.40	4.46	6.45	6.40	5.38	4.34	4.28	5.01	6.01		6.73	6.73	2.68
-in.2	NO 5	0.59	3.36	4.30	4.65	2.61	0.76	1.12	4.24	4.55	4.40	2.97	0.71	0.28	2.53	3.83	5.12	2.93	0.87	0.83	2.80	4.33	3 08		1.67	1.67
e, 1b/sec-in	HC (x 10-4	0.05	0.48	1.41	0.34	2.00	10.02	6.82	0.57	0.45	0.75	0.45	0.09	0.03	0.58	0.83	0.10	1.46	7.15	1.43	1.22	0.22	0.63		0.21	0.06
Flow Rate,	\$ 00 ×	0.20	1.14	3.00	3.21	08.9	10.73	08.6	2.93	2.49	2.11	1.38	0.33	0.18	2.01	3.29	2.15	5.10	69.6	10.53	4.72	2,45	2.43	0.87		0.31
	Fue1 (x 10-3)	99.0	4.42	8.26	11.62	11.85	10.88	11.17	12.10	69.6	7.33	4.71	86.0	0.42	4.96	9.35	11.64	11.70	10.84	10.43	11.65	10,55	7.65	2.88		0.92
Total	(Meas)																									
Total	(Calc)	839	1448	2030	2991	3011	2494	2654	3122	2430	1825	1507	904	836	1649	2350	3039	3016	2585	2634	2994	2690	1881	1298	040	010
Static	Press	13.56																								
Total	Press	14.90	24.70	33.30	33.40	33.00	32.40	32.80	33.50	33.60	33.00	25.20	15.50	14.10	24.00	33.10	33.10	32.80	32.30	32.30	33.00	33.40	33,40	19.50	15.00	
×	NO _x	10.0	10.0	8.5	5.5	4.6	4.1	4.1	8.4	8.9	9.6	9.6	10.2	9.5	0.6	6.9	5.5	4.6	4.0	4.1	4.3	5.7	8.8	9.3	7.6	
Emission Index	NO 1b Fue	8.9	7.6	5.2	4.0	2.2	0.7	1.0	3.5	4.7	6.0	6.3	7.2	9.9	5.1	4.1	4.4	2.5	8.0	8.0	2.4	4.1	5.2	5.8	6.3	
missic	HC 1b/1000	7.6	10.8	17.1	2.9	16.9	92.1	61.1	4.7	4.6	10.3	9.6	9.0	8.2	11.6	8.9	6.0	12.5	0.99	13.7	10.5	2.1	8.3	7.2	9.9	
2	8 4	30.2	25.8	36.3	27.6	57.4	9.86	87.7	24.2	25.7	28.8	29.2	33.4	44.0	40.5	35.2	18.5	43.6	89.4	101	40.6	23.2	31.8	30.3	34.2	
	Fuel/Air Ratio	.0042	.0132	.0228	.0401	.0415	.0348	.0366	.0427	.0295	.0192	.0141	.0053	.0041	.0164	.0282	.0408	.0412	.0354	.0344	.0406	.0342	.0203	.0109	.0059	
u.c	NO _X	8.92	82.5	120	133	116	9.98	91.6	124	123	114	84.4	34.9	25.3	92.1	120	135	114	85.9	85.9	106	119	11	63.8	36.6	
osi tion	NO mdd	23.9	62.9	13.8	9.76	55.8	15.6	21.5	91.0	83.7	71.2	55.8	24.6	17.5	52.5	71.2	108	61.8	16.7	15.8	59.8	85.5	64.6	40.0	23.9	
	HC	66.4	292	792	233	1387	6411	4457	396	272	402	277	101	71.7	390	503	74.7	1018	4666	939	843	145	342	163	81.1	
Measured Gas Com	202	0.87	2.71	4.66	8.46	8.51	6.36	7.00	9.04	6.15	3.95	2.90	1.10	0.85	3.35	5.84	8.68	8.54	6.72	98.9	8.45	7.19	4.17	2.25	1.22	
Measu	S md	134	358	878	1190	2563	3660	3433	1113	807	584	434	189	194	101	1056	812	1932	3384	3688	1775	848	680	348	214	
Radial	Position in.	-14.01	-11.47	- 8.93	- 6.01	- 3.47	- 0.97	1.71	4.24	7.15	9.70	12.24	14.78	-14.88	-12.29	- 9.34	- 6.75	- 3.81	- 1.36	1.65	4.51	7.09	10.04	12.63	14.11	
	2	'	1	. 1	1	- 1			- 1																	

Table 51. Summary of Plume Measurements, J79-15, Run No. 40-3.

Run Date 1/9/75. Power Setting MID A/B, Axial Station 0 ft

																							177			
	NO _x 5	0 20	2.70	4.99	96.9	6.84	4.72	5.29	08.9	89.9	4.88	2.81	0.42	0.73	5.05	99.9	7.80	6.23	4 79	5 15	5 89	6.83	5.28	3.60	0.70	
-in.2	NO 5 (x 10 5)	0.13	0.39	0.95	5.26	5.03	1.10	1.84	5.49	3.94	08.0	0.42	0.12	0.13	1.65	4.28	6.45	4.03	1.23	1.72	4.05	5.31	1.35	0.57	0.11	
e, 1b/sec-in	HC (x 10 -4)	2.22	14.02	12.73	1.04	0.71	80.9	3.34	0.29	1.05	10.35	8.32	1.17	1.05	3.55	0.64	0.04	0.72	4.22	2.98	0.42	80.0	4.54	4.82	1.14	
Flow Rate,	00 (x 10-4)	0.57	4.16	9.95	9.51	7.82	13.16	11.16	4.89	7.86	10.35	4.88	0.58	96.0	89.9	7.09	8.55	7.14	11.82	11.68	6.37	5.42	80.6	5.74	1.01	
	Fuel ₃ (x 10)	0.83	5.52	19.01	13.14	12.91	10.97	11.50	13.07	11.93	9.95	5.30	69.0	1.12	9.19	11.90	13.44	12.21	11.15	11.45	12.21	12.64	10.35	6.32	1.21	
Total	(Meas)																									
Total	(Calc)	831	1433	2323	3409	3400	2689	2913	3454	3059	2201	1544	843	1040	2376	3112	3622	3248	2805	2937	3333	3372	2525	1877	1044	
Static	Press	13.55																							-	
Total	Press psia	14.70	23.00	32.80	33.00	32.60	31.50	32.00	33.00	33.00	32.90	23.00	14.50	14.80	30.40	32.50	32.20	32.00	31.60	31.60	31.50	32.50	32.40	24.50	15.00	
	NOX	6.0	4.9	4.7	5.3	5.3	4.3	4.6	5.2	5.6	6.4	5.3	6.1	6.5	5.5	5.6	5.8	5.1	4.3	4.5	4.8	5.4	5.1	5.7	5.8	
Inde	NO 1b Fuel	1.6	2.0	6.0	4.0	3.9	1.0	1.6	4.2	3.3	8.0	6.0	1.7	1.2	1.8	3.6	4.8	3.3	1.1	1.5	3.3	4.2	1.3	6.0	6.0	
Emission Index		267	254	120	6.7	5.5	55.4	0.62	2.2	8.8	104	157	170	93.7	38.6	5.4	0.3	5.9	37.8	26.0	3.4	9.0	43.9	76.2	94.5	
Emi	1b/1000	68.3	75.3	93.8	72.4	9.09	120	97.0	37.4	62.9	104	92.1	83.8	85.7	72.7	9.69	63.6	58.5	106	102	6.13	42.9	87.7	6.06	83.8	
	Fuel/Air Ratio	9500.	7 8710.	.0322 9	.0495 7	.0490	.0374	.0405 9	.0496	.0421	.0292	.0178	.0052 8	0081 8	0300	.0430	.0535 6	.0458	.0388	.0410	.0473	.0479 4	.0332 8	.0220	.0082	
		21.4	54.6	92.1	158	155	7.86	113	155	142	87.7	58.7	.3	2	101	144	184	139	102	111	136	155	103	8.77	30.1	
ition	MOX m	5.6 21	7.8 54	18.2 92	119 1	115 1	22.4 98	38.2	125 1	83.5	14.5 87	8.7 58	5.6 20.3	6.2 33.2	33.6	92.3	153 1	89.7	24.8	37.1	93.6	121	26.6	12.3 77	4.8 30	
Composition	NO w	34	89	62	69.	532	58	2328 36	216	730 8:	6099	5684	1844	1575	2328 33	158 92	9.	532 89	2919 2	2113 3	317 9:	56.5	2919 20	103	1602	
Sa s	HC PP	0.82 31	2.65 92	77 17	24	۵,	07 41	-		,	5.23 60	2.98 56	0.86 18	1.47 15	5.90 23	92	27 27	9.53	7.56 28				6.46 29	4.08 34	1.48 16	
Measured	00 CO2	404 0.	1411 2.	3219 5.71	3883 10.24	3219 10.23	4821 7.07	4221 8.02	2011 10.52	2990 8.68	3219 5.	1723 2.	459 0.	731 1.	2323 5.	2757 8.92	3705 11.27	2892 9.	4391 7.	4505 8.11	2660 9.93	2222 10.12	3110 6.	2116 4.	721 1.	
										7			+								7					
Radial	Position in.	-15.10	-12.20	-9.29	-6.74	-3.83	-0.97	2.06	4.96	7.51	10.42	13.33	16.23	-14.88	-12.29	-9.34	-6.75	-3.81	-1,36	1.65	4.51	7.09	10.04	12.63	15.21	
	Probe No.	1	-	-	+	1	-	-	1	-	-	-	-	2	63	2	2	2	2	2	2	2	2	2	2	

Table 52. Summary of Plume Measurements, J79-15, Run No. 41-1.

Run Date 1/10/75, Power Setting MAX A/B, Axial Station 0 tt

-		SIL AND				-		-			100	100			_				_		_	_	_	_	_	
	NO _x 5	0.52	3.47	6.79	7.43	6.46	4.56	5.36	6.82	6.81	5.96	1.72	0.41	1.09	6.45	96'9	7.16	5.78	4 36	4.34	5.72	6.65	6.64	3.20	1 05	
-in.2	NO 5 (x 10 3)	0.39	2 67	5.72	6.29	4.78	0.95	2.33	5.73	5.86	4.96	0.72	0.17	99.0	5.16	5.72	5.94	3.61	28.0	1.00	3.98	5.43	5.56	2.20	0.44	
te, 1b/sec-in	HC 5 (× 10 - 5)	0.12	0.14	0	0	3.49	75.44	24.14	1.09	40.86	0.37	4.52	1.79	0.25	0.13	0	0.14	7.22	51.78	44.11	4.23	0.14	0.14	0.27	1.16	
Flow Rate,	(x 10-4)	0.79	4.51	9.02	17.86	9.77	14.64	10,39	9.79	9.18	4.70	3.09	0.78	1.31	10.63	11.99	89.6	7.83	13.52	13.37	8.06	10.25	9.93	3.68	1.74	
	Puel (x 10 3)	1.01	7.22	13.31	14.29	12.91	10.61	11.66	13.64	13.62	12.41	3.59	0.75	1.94	12.89	13.62	13.50	12.04	10.90	11.14	12.44	13.57	13.55	19.9	2.10	
Total	(Meas)																									
Total	(Calc)	1144	2549	3594	3771	3442	2589	3037	3616	3606	3340	1791	986	1616	3529	3686	6998	3263	2778	2882	3365	3665	3661	2558	1556	
Static	-	13.35																								
Total	Press	14.50	23.00	32.00	32.50	32.10	30.50	31.50	32.70	32.80	32.10	17.80	5.5 14.30	15.10	31.20	31.80	31.80	31.20	30.40	30.40	31.50	32.00	32.00	21.50	15.50	
*	10,	5.1	4.8	5.1	5.2	5.0	4.3	4.6	5.0	5.0	8. 4	4.8	5.5	5.6	5.0	5.1	5.3	8.4	4.0	3.6	4.6	4.9	4.9	4.8	5.0	
n Inde	NO 1b Fue	3.9	3.7	4.3	4.4	3.7	0.9	2.0	4.2	4.3	4.0	2.0	2.2	3.4	4.0	4.2	4.4	3.0	8.0	0.9	3.2	4.0	4.1	3.3	2.1	
Emission Index	1b/1000	1.2	0.2	0	0	2.7	11.11	20.7	0.8	0.3	0.3	12.6	23.9	1.3	0.1	0	0.1	0.9	47.5	39.6	3.4	0.1	0.1	0.4	5.5	
	8 4	78.5	62.4	8.19	125	75.7	138	89.1	71.8	67.4	37.9	86.0	104	67.7	82.5	0.88	7.17	65.0	124	120	64.8	75.5	73.3	55.2	82.7	
	Fuel/Air Ratio	.0088	.0319	.0531	.0581	.0501	.0364	.0427	.0537	.0534	.0472	0610.	6900	01.59	.0520	.0555	.0549	.0463	.0391	.0408	.0483	.0548	.0547	.0320	.0151	
on	NO _X	28.3	92,7	161	178	150	94.4	117	159	160	135	57.0	24.0	55.1	154	167	174	133	95.5	9.96	133	161	160	93.6	46.8	
mposition	NO	21.4	72.1	135	152	111	19.9	50.5	133	137	114	23.8	9.5	33.5	123	139	144	83.6	18.4	21.2	91.0	131	132	64.1	19.7	
Ges Com		1.77 21.9	10.1	2.4	1.8	264	6.69 5158	8.58 1745	0.08	33.2	31.4	488	340	41.5	9.5	4.7	7.1	544	7.45 3679	3195	318	11.48 14.2	7.7	27.9	169	
Measured C	§°≈		6.39	11.15	11.88	10.42			4200 11.25 80.0	11.21 33.2	10.02	3.79	1.34	3.23	10.81	11.56	11.51	9.61	_	7.88	10.08		4371 11.47	6.63	3.02	
	1	726	2123	3919	7916	4116	5355	4099	4200	3919	1938	1729	751	1134	4657	5326	4285	3253	51 79	5237	3391	4513	4371	1886	1314	
Radial	Position in.	-16.55	-13.45	-10.55	-7.28	-4.37	-1.13	2.24	5.14	8.42	11.51	14.78	16,39	-15.89	-13.06	-10.06	-7.23	-4.24	-1.37	2.02	4.95	7.95	10.95	13.96	15.83	
	Probe No.								-	1	_	-	1	2	2	2	2	2	2	2	2	2	2	2	2	

Table 53. Summary of Plume Measurements, J79-15, Run No. 43-1.

Run Date 1/14/75, Power Setting WIL , Axial Station 60 ft

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	NO×	01 ×																					
		7	1															1000					
-in.2	NO	ر ک																					
Flow Rate, 1b/sec-in	HC .	0																					
ate, 1		× 10																					
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	-	č ~	_										_										
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_		+	+																				
Total	(Meas)																						
Total	_	2																					
	_	1	4																				
Static	Press	psia																					
Total	Press	psia	13.70	13.70	13.80	13.90	13.80	14.00	14.40	14.20	14.00	13.90	13.80	13.70	13.70	13.70							
	, OH		13.5	15.9	15.6	13.6	14.6	14.8	14.1	14.5	14.2	15.2	15.0	16.7	15.2	19.4							
Index	ON.	Tel.	15.4	16.3	15.6	13.8	14.0	14.8	14.3	14.0	14.2	13.6	15.8	16.2	14.0	12.8							
Emission Index	HC	1b/1000 1b Fuel	4.6	4.1	2.6	1.7	1.4	1.1	6.0	8.0	6.0	1.1	1.5	2.2	2.5	4.8							
Bmi	8	16/1	15.1	15.1	11.8	9.4	8.1	7.3	9.9	6.5	6.7	9.7	9.5	12.1	13.6	15.4							
		+	\neg			H		-	-				-							-			
	Fuel/Air	Ratio	.0002	.0002	.0004	9000	0100	1100.	.0013	.0014	.0012	0100.	2000.	.0004	.0003	.0001							
	NOx	2	9.2	3.6	5.0	6.7	9.4	11.9	13.0	13.7	12.3	10.5	8.7	5.7	4.6	3.5							
Composition	ON	┪	3.0	3.6	5.0	6.7	9.0	9.11.9	13.2 13.0	13.2 13.7	12.3 12.3	9.4	8.2	5.5	4.2	2.3							
comb		I	6.2	3.0	2.7	2.7	3.0	2.8	2.6	2.5	2.5	2.6	2.6	2.5	2.5	2.8							
P Pa	20	,	90.0	0.07	0.10	0,16	0.21	0.26	0.30	0.31	0.28	0.23	0.17	0.11	01.0	90.0							
Measur	OS COS HC	5	4.9	5.5	6.2	9.7	9.8	9.6	10.1	10.1	9.6	9.8	8.1	6.7	6.7	4.5							
		1	+	-	-			-	0.38	20.35			-										
Radial	4	=	143.90	-96.46	-77.83	-58.65	-39.34	-19.59	0.	20.	40.17	59.44	78.58	97.18	110.31	143.67							
15.77	Probe	No.	-	-	1	1	1	1	1	1	1	1	1	1	1	1							

Table 54. Summary of Plume Measurements, J79-15, Run No. 43-2.

Run Date 1/14/75, Power Setting MIN A/B, Axial Station 60 tt

4 2	_	-	-	_	_	_	_	-	_	-	_	_	-	_	_	_	_	-	_	_	_	_	_	_	-	
1	NOX	(v 10)																								
	_	0				-	-	L		-	-	_	L	-	_			-	-	_	-	-			_	
2.4		10																								
/sec-1	-	٥				+		-		+			-	-	-		-				-					
te, 1b	ĦĊ.	(x 10																								
Flow Rate, 1b/sec-in		(x 10)																								
"	_	č				-		-	_	-	-		L	-	_		_	_	-		-				_	
	Puel	(x 10																								
Total	(Meas)	"R																								
-	-	-						-					-		-				-	-	-					
Total	(Calc)	*																								
Static	Press	psia																								
Total	Press	psia	13.70	13.80	13.85	13.95	14.00	14.20	14.50	14.50	14.20	14.10	13.90	13.80	13.70	13.70										
	NO		9.1	10.1	8.8	9.5	6.8	8.1	8.4	8.6	8.7	9.4	10.7	8.6	9.7	8.3										
Inde	NO	1b Fue	9.1	9.1	8.8	7.7	6.2	5.9	5.5	5.4	5.8	0.9	6.7	6.4	9.3	6.7										
Emission Index		16/1000	9.9	5.9	4.8	4.8	3.8	3.6	3.4	3.5	3.6	3.9	4.8	5.0	6.3	7.9										
ā	8	119	35.2	32.5	33.0	30.0	27.7	27.1	26.2	26.6	27.0	28.4	30.2	31.1	37.1	33.7										
	Fuel/Air	Katio	.0002	.0004	.0007	1100.	8100.	.0022	0027	.0026	.0023	7100.	2100.	6000	.0005	.0003										
	NO _x	4	2.0	3.6	4.6	7.3	9.01	12.0	14.7	14.8	13.0	10.9	6.8	6.1	4.2	2.3										
omposition	NO N	7	2.0	3.3	4.6	5.9	7.3 10	8.8 12	9.6 14	9.2 14	8.8 13	6.8 10	5.6	4.0	4.0	1.8 2			-							
Compo		_	4.7	7.0 3	8.1 4	11.9 5	14.9 7	17.3 8	19.8	19.7	17.9	14.9 6	13.2 5	1	8.9	7.1			-							
ed Ges	20.	-	0.07	0.12	0.17	0.25 1	0.38	0.48	0.57		0.49	0.37	0.27	0.20 10	0.14	60.0										
Measur	OS 00 NC	uda	12.7	19.2	28.2	37.7	54.0	66.4	75.8		66.7	53.7	41.4	31.8	26.3	15.1										
Radial	HOI		143.67	-96.49	-77.87	-58.71	-39.43	-19.59	0.38		40.17	59 . 44	78.58	97.18	110.31	143.67										
		No.	-	-	-	1	1	1	1	1	1	1	1	-	1	1										

Summary of Plume Measurements, J79-15, Run No. 43-3. Run Date 1/14/75, Power Setting MID A/B, Axial Station 60 ft Table 55.

	Radial		Measured G	Gas Comp	Composition	uc.		<u>س</u>	Emission Index	Index		Total	Static	Total	Total		Flow R	Flow Rate, 1b/sec-1n	sec-1n.2		-
Probe	-	00	200	HC	NO	NOX	Fuel/Air	8	HC .	NO	NO.	so.	Press	(Calc)	(Meas)	Fuel	00	HC	ON	NOx	
-		31.9			10	2.6	.0002	82.9		8.6	11.3	13.70	psia	4	4	2 3	e e	_	2	+	1
-	-96.49	64.8			2.7	8.4	9000	82.8	39.0			13.80									T
1	-77.87	100	-	82.5	2.9	5.8		84.7	9. 98	4.1	8.1	13.90									T
1	-58.71	145	0.32	145	3.3	8.8	9100.	83.3	41.8	3.1	8.4	14.00									T
1	-39.43	225	0.47	177	3.6	3.6 10.9	.0024	87.6	34.6	2.3	7.0	14.10									Т
1	-19.59	290	0.55	234	3.8	3.8 13.9	.0028	1.96	38.9	2.1	9.7	14.30									Т
1	0.38	339	0.70	262	4.2	4.2 15.3	.0035	89.4	34.7	1.8	6.7	14.50									
1	20.35	342	69.0	288	4.0	4.0 16.1	.0035	91.1	38.5	1.8	7.1	14.60									
1	40.17	308	0.61	253	3.6	3.6 14.2	.0031	92.9	38.4	1.8	7.1	14.50									
1	59.44	252	0.48	204	3.5	3.5 11.7	.0024	96.0	39.0	2.2	7.3	14.10									_
1	78.58	177	0.36	172	3.0	9.5	8100.	88.6	43.0	2.5	7.8	14.00									_
1	97.18	110	0.24	128	2.6	7.5	1100.	82.7	48.6	3.2	9.3	13.90	*								T
1	110.31	95.1	0.18	83.6	2.4	5.5	8000.	94.9	41.8	3.9	0.6	13.80									
1	143.67	55.0	0.11	47.5	1.7	3.5	.0004	92.0	39.8	4.8	9.5	13.70		1							
									3												
			The second second																		
																					T
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Table 56. Summary of Plume Measurements, J79-15, Run No. 43-4.

Run Date 1/14/75, Power Setting MAX A/B, Axial Station 60 ft

						li e				2.10										H.	- 4				
	, x	(0)																							
	NON	ž																							
2	NO	10																							
Flow Rate, 1b/sec-in.	_	ٽ م	-											-		_		_				_	_	_	
	HC	01 ×																							
		7						-					-	-	-	-			-					-	
	8	0 ×																							
	e1																								
	Fuel	(x 10																						1	
~	. (3													*											
Total Temp (Meas)		a a																							
Total	(Calc)	"R																							
									-														-	-	
Static	Press	psia																							
Total	Press	psia	13.50	13.50	13.80	14.00	14.10	14.70	14.80	14.20	14.00	13.80	13.80	13.80	13.50										
	, No.	1	8.9	5.8	6.4	5.7	5.5	5.3	5.5	5.6	6.2	9.9	7.1	6.7	7.4	_									
Index	NO	1b Fuel	8.9	5.8	5.5	5.1	4.7	4.5	4.6	4.7	5.2	5.5	6.1	5.8	7.4										
Emission Index			3.3	1.2	6.0	9.0	0.4	9.0	4.0	0.5	0.7	1.0	1.7	1.7	3.3										
Emi	8	1b/1000	15.1	11.7	6.6	8.8	8.1	9.7	7.4	8.4	9.6	9.01	12.1	11.8	15.6	_									
		1			-			-		4				1/		-									
	Fuel/Air	Ratio	.0007	6100.	.0025	.0037	.0048	.0055	.0054	.0042	.0031	.0021	.0013	.0012	9000										
	NOx	mdd	3.6	7.3	10.5	13.7	6.91	6.81	0.61	15.2	12.7	9.3	6.4	8.9	3.6										
position	NO N	7	3.6	7.3	8.9	12.1	14.6 16.9	16.0 18.9	16.0 19.0	12.8 15.2	10.5	7.8	5.5	5.0	3.6										
		Т	5.7	4.8	4.6	4.6	4.5	4.6	4.6	4.6	8.8	4.7	5.0	4.8	5.3										
Measured Gas Col	200	*	0.18	0.41	0.54	0.78	1.02	1.17	1.15	68.0	0.67	0.46	0.29	0.28	0.16	-									
Measur	8		13.4	24.2	26.7	34.7	41.4	44.4	42.5 1.15	37.7	32.2	24.6	17.9	16.8	12.7	-									
		1	7						0.38 4							-	-	-							
Radi	2	i	143.67	92.46	78.58	59.44	40.17	20.35	0.	-19.59	-39.43	-58.71	-77.87	-91.50	143.67										
	Probe	No.	-	-	-	-	1	1	1	1	-	1	1	1	1										
	_						-	-														-			